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VOL. XVIII. NO. 12.

JUNE 15, 1890.

PEACE ON EARTH GOOD WILL TOWARD MEN



TEACHINGS IN

BEE CULTURE

DEVOTED TO

BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY
A. T. ROOT

TERMS, ONE DOLLAR PER YEAR.

FARMING, DUCHESS, N.Y.

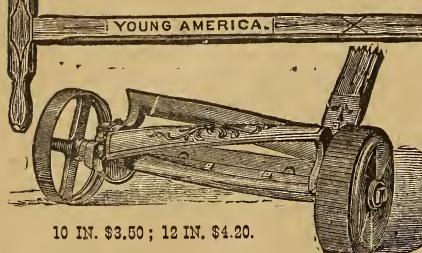
ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER.

GLEANINGS IN BEE CULTURE.

YOUNG AMERICA

LAWN MOWER.

The cheapest machine offered anywhere. Many prefer them to one with two drive wheels because they run so easily, and are so light. They are just right for running among the hives. For the ladies who appreciate outdoor exercise you could have nothing better than a 10-inch Young America lawn-mower to keep the grass down on the lawn. We have sold over 200 of them but never before have we offered them so low. Write for prices on quantities if you can use more than one of either kind.



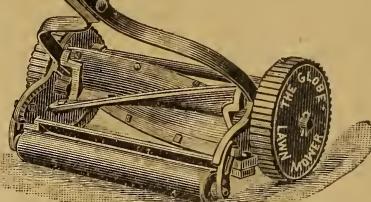
10 IN. \$3.50; 12 IN. \$4.20.

THE GLOBE LAWN-MOWER.

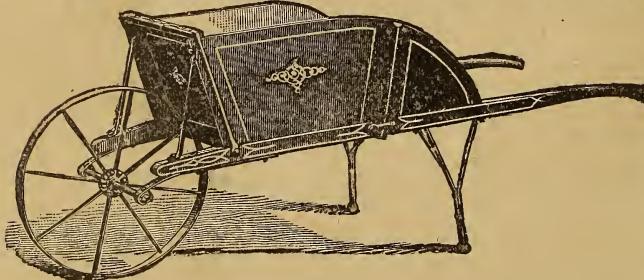
Guaranteed a First-Class Machine. The Globe lawn-mower shown in cut combines all the best features, and is a first-class mower in every respect. Having only three knives it will cut longer grass than those having four. The axle of the drive-wheel does not project, so that you can run close to the hive. It has two drive-wheels and roller, and the driving gears are simply perfect. The prices are very much lower than on any other first-class mower.

TABLE OF PRICES:

	LIST PRICE	OUR PRICE
10 in. Globe....	(\$13.00)	\$4.55
12 " "	(15.00)....	5.25
14 " "	(17.00)....	5.95
16 " "	(19.00)....	6.65
18 " "	(21.00)....	7.35



OUR DAISY WHEELBARROW.



The springs are oil-tempered with adjustable bearings, so the wheel will always run free. More than all, the wheelbarrows are the nicest job of painting and varnishing, I believe, I ever saw, for a farm implement. They are handsome enough to go around town with, and strong enough to do heavy work; and yet the price of the small size No. 3 is only \$4.00; the larger size No. 2 is \$4.25. Over 200 sold in 8 months

Who has not felt the need of a **Light, Strong, and Durable**, and at the same time **Cheap** wheelbarrow? The cut shows one that combines all these qualities better than any other we have ever seen. We have two sizes—the smaller one weighing only 35 lbs., and yet it will carry 500 lbs. safely, and it can be packed so closely together for shipment that you can take the whole thing under your arm and walk off easily. The wheel has flat spokes instead of round. The legs are steel, so they will neither break nor bend, even if you bump them on the sidewalk.

SINGER SEWING-MACHINE, \$11 TO \$16.

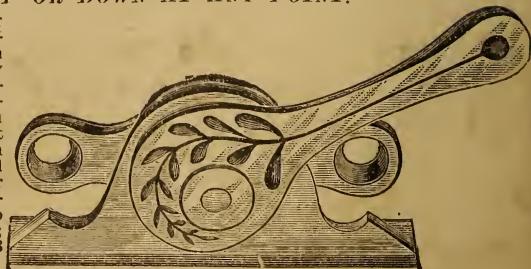
Made from latest models; first class in every respect, and warranted for 5 years. A boon to many an overworked housewife who can not afford to pay the price usually asked by agents. Cut shows No. 3. No. 1 is the same without the cover, leaf, and two drawers. Price \$11.00. No. 2 has a cover, but no leaf or side drawers. Price \$12.50. No. 3, as shown in the cut, price \$14.00. No. 4, same as No. 3, with 2 more drawers to the right. Price \$15.00. No. 5 has 3 drawers on each side. Price \$16.00. Wood parts are oil polished, walnut; balance-wheel is nickel plated, and each machine includes a full set of attachments, with instructions for use. We ship them direct to customers from factory in Chicago. We have a catalogue giving cut of each machine and full description which we shall be pleased to mail on application.



BUCKEYE SASH-LOCK.

A DEVICE TO FASTEN WINDOWS UP OR DOWN AT ANY POINT.

For many years I have been trying to get something better to hold a window up than a stick or book, or something of that sort; but although we have tried them, even paying as high as 75 cts. per window, I have never had any thing please me so well as the one here shown. This device holds the sash securely by friction in any desired position, as tight as if it were in a vice. It prevents the sash from rattling, and excludes the dust by making tight joints, and yet it does not mar the wood. It is put on with two screws, and can be fitted by an inexperienced hand in three minutes. It works equally well on upper or lower sash, with or without weights. Printed instructions are furnished with each one, as well as screws to fasten them on with, and yet the price is only 5 cts.; 1 doz. for 50 cts.; 100 for \$4.00. If wanted by mail, add 3 cts. each extra. The above are japanned.



A. I. ROOT, Medina, Ohio.

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125 COLONIES ITALIAN BEES AT BOTTOM PRICES. A. F. BRIGHT, Mazeppa, Minn. 7tfdb

ITALIAN QUEENS AND BEES!

The very best honey-gatherers. Unested queen, 80c; tested, \$1.00; select, \$1.50. Bees, \$1.25 per lb. Satisfaction guaranteed. Send for price list.

8-10-12d C. M. HICKS, Fairview, Wash. Co., Md.

☞ In responding to this advertisement mention GLEANINGS.

SPECIAL CROPS.

A magazine for advanced agriculturists; 25 cts. per year; sample 7 cts. Also, Black Minorcas, B. Leghorns, and S. Wyandottes; eggs of either, per setting, 75 cts.; 26 at one time, \$1.00. 4-50d

C. M. GOODSPED, Skaneateles, N. Y.

☞ In responding to this advertisement mention GLEANINGS.

BEES

SEND for a free sample copy of the BEE JOURNAL — 16-page Weekly at \$1 a year—the oldest, largest and cheapest Weekly bee-paper. Address BEE JOURNAL, Chicago, Ill.

Please mention this paper.

IF YOU ARE IN WANT OF BEES or BEE-KEEPERS' SUPPLIES,

Send for our New Catalogue.

9tfdb OLIVER HOOVER & CO., Snyderstown, Pa. Mention this paper.

4-FRAME NUCLEI, Tested Queen, Brood, and plenty of Bees, Italians, for \$3.50. Imported queens, \$4. W. A. SANDERS, Oak Bower, Hart Co., Ga.

ITALIANS For pure Italian bees and queens, and directions to Italianize common bees, address F. H. & E. H. DEWEY, 55 Mechanic St., Westfield, Mass. Please mention this paper.

That Hundred-Dollar Queen.

\$1 will purchase a daughter of this wonderful queen. Descriptive circular free. Address 9tfdb AM. APICULTURIST, Wenham, Mass. Please mention this paper.

Ho! Ye in Dixie Land!

LEARN SOMETHING NEW

Of Interest to You in my New 1890 Catalogue

Enlarged, and prices reduced. It gives LOW SPECIAL FREIGHT RATES to many Southern points, especially to points in TEXAS.

Southern Bee-Keepers, Send for it NOW.

J. M. JENKINS, - Wetumpka, Ala.

Please mention this paper.

DADANT'S FOUNDATION

ADVANCES THIS DATE, 3c, WHOLE-SALE AND RETAIL.

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Nebraska; G. L. Tinker, New Philadelphia, Ohio; E. S. Armstrong, Jerseyville, Ill.; E. Kretchmer, Red Oak, Iowa; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; E. L. Goold & Co., Brantford, Ont., Can.; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilmont, Theilmont, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Pouder, Indianapolis, Ind., and numerous other dealers.

LANGSTROTH on the HONEY-BEE, REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to

CHAS. DADANT & SON,

HAMILTON, HANCOCK CO., ILLINOIS.

☞ In responding to this advertisement mention GLEANINGS.

AFTER HIAWATHA.

BY SECOR.

HO! ye gleaners after knowledge
In the field of apiculture,
Stop a moment, please, and read this,
Stop and read this advertisement.
Send and get my creamy MONTHLY,
(I will send three samples gratis)
It contains the views of leading
Bee-men on some special topic;
Points out errors; makes you ponder,
And abandon wrong ideas.
If you'd march with those who "get there,"
Send your stamps to "Hutch the hustler"—
Fifty cents per annum only;
Twelve REVIEWS for only fifty.

Address BEE-KEEPERS' REVIEW,
W. Z. HUTCHINSON, Ed. & Prop., Flint, Mich.

☞ In responding to this advertisement mention GLEANINGS.

DO YOU WANT QUEENS

If so, see Moore's "ad." in April 1st and June 1st Nos. A lot of fine queens ready to mail.

J. P. MOORE, Morgan, Pendleton Co., Ky.

THE BRIGHTEST

Five-banded, golden Italian Bees and Queens, and the **Reddest Drones**. Very gentle; very prolific; good honey-gatherers—working on red clover—and the **Most Beautiful** bees in existence! Took 1st premium at Michigan State Fair, in 1889. Reference, as to purity of stock, Editor of *Review*. Sample of bees, five cents. Untested queens, \$1.00. 6 for \$5.00. Tested (at least 3 bands), \$2.00; selected, tested (four bands), \$3.00; breeding queens (4 to 5 bands), \$6.00. Virgin queens, 50 cents; 5 for \$2.00. Safe arrival and satisfaction guaranteed.

JACOB T. TIMPE,
Grand Ledge, Mich.

☞ In responding to this advertisement mention GLEANINGS.

Wants or Exchange Department.

WANTED.—To exchange Columbia tricycle for bee supplies. S. G. KILGORE, London, O.

WANTED.—To exchange all kinds of wall paper, for honey. 1tfdb J. S. SCOVEN, Kokomo, Ind.

WANTED.—To exchange one Green's solar wax-extractor, new, for an incubator or Italian queens. G. C. HUGHES, 6tfdb Pipestem, West Va.

WANTED.—To exchange 1 lb. of thin fdn. for 2 lbs. of wax. 7tfdb C. W. DAYTON, Bradford, Ia.

WANTED.—To exchange for sections, fdn., honey, or offers, an American fruit-evaporator, No. 2; capacity, 10 to 12 bu. apples per day. For description of evaporator, write to American Mfg. Co., Waynesboro, Pa. O. H. HYATT, 9tfdb Shenandoah, Ia.

WANTED.—To exchange one or more finely bred Scotch collie (Shepherd) puppies, for Italian queens, or supplies. 1-12d F. W. GEORGE, Williamstown, Iowa.

WANTED.—To exchange photo outfit for Root's chaff hives in flat, or safety bicycle. F. SHILLING, Jewett, Ohio.

WANTED.—Parties with capital to establish the manufacturing of bee-hives and supplies. Have already nice growing trade established. Can be largely increased by manufacturing. "References." J. B. KLINE, Topeka, Kan.

WANTED.—Italian queen for a siring of White Minorca eggs. MISS SARAH SHAW, Stockholm Depot, St. Lawrence Co., N. Y.

WANTED.—To exchange Japanese buckwheat for Green's solar wax-extractor. R. ROBINSON, Laclede, Ill.

Black and Hybrid Queens For Sale.

Hybrid queens for sale, 25c each. Black queens, 20c each. C. C. KIRKMAN, Redallia, Pitt Co., N. C.

Mismated Italian queens, 25c each, and blacks, 20c. Safely delivered. W. G. HAYEN, Pleasant Mound, Ill.

J. W. Taylor has 12 or 15 hybrid and mismated Italian queens that he will sell for 25c each, or five for \$1.00, or \$2.25 per dozen. 12-15db J. W. TAYLOR, Ozan, Ark.

For sale, 25 to 40 hybrid queens, good layers (wings clipped), at 25c each, as they come; 40c for the best. M. LUDTMAN, Hannibal, Monroe Co., Ohio.

Black queens, 20c; hybrid, 35c; mismated Italians, 50c. Stamps for pay. J. A. BUCKLEW, Warsaw, Coccocton Co., O.

For sale—25 black and hybrid queens for 25c each, if a ready-provisioned cage is sent with order. Age unknown, but will fend none but prolific ones. J. W. SMITH, Moscow, Lamoille Co., Vt.

Hybrid queens at 30c each, as long as the supply lasts. GUSTAVE GROSS, Milford, Wis.

IT BEATS ALL!

Italians, 60c, hybrids, 50c per lb., and a queen with every 7 lbs. bees. Order quick.

W. E. YODER, Lewisburg, Union Co., Pa.

In responding to this advertisement mention GLEANINGS.

FOR SALE--FINE PROPERTY

With 8½ acres of land, and apiary of 100 colonies of Italian bees, fixtures and all. Address for particulars. LOUIS WERNER, Edwardsville, Ill.

In responding to this advertisement mention GLEANINGS.

CARNIOLAN APIARY FOR SALE!

My Carniolan apiary must be sold at once, to allow me to move to Colorado Springs.

"You have the best Carniolans in the country." H. ALLEY.

Select imported queen, \$5; or untested queen, \$1: untested, ½ doz., \$5; 1 lb. bees, \$1; 3-frame nucleus, \$2.50; full colonies, in 1-story Simplicity 9-frame hive, \$5; add price of queen you want. Queens by mail; others on board cars here by freight or express, as ordered. Remittance of currency, bank draft, or money order must accompany all orders.

S. W. MORRISON, M. D., 12tfdb Oxford, Chester Co., Pa.

In responding to this advertisement mention GLEANINGS.

ALBINO ♀ QUEENS.

I will furnish pure queens of this gentle and beautiful race of bees this season at the following prices: Extra select tested, \$1.50; Warranted, 75c.

JOSEPH MOSER,

Festina, Winchfield Co., Iowa.

In responding to this advertisement mention GLEANINGS.

→*CHENANGO VALLEY APIARY.*←

Please give me your order. Two-frame nucleus, and try my fine yellow with queen, in June, \$2. low Italian queens; are Tested queen, \$1.50; unfrom imported stock, \$1.00. 8tfdb well known to my customers. MRS. OLIVER COLE, Sherburne, Che. Co., N.Y.

In responding to this advertisement mention GLEANINGS.

50 COLONIES OF ITALIAN BEES for sale, in Langstroth hives, at \$5.00 per colony. 8-9-10d JOHN GRANT, Batavia, Clermont Co., Ohio.

In writing advertisers please mention this paper.

ITALIAN QUEEN BEES At 75 Cts. Each.

Pure and First-Class.

I have bred Italian queens 25 years, and am now breeding from the best stock I ever saw. Please try one.

E. D. ANDREWS,

North New Salem, Mass.

In responding to this advertisement mention GLEANINGS.

BEES AT BUYER'S RISK; 50c PER LB.

J. J. HARDY, Lavonia, Franklin Co., Ga.

HONEY - EXTRACTOR FOR \$5. Almost new. W. C. MARTIN, Ashley, Del. Co., O.

COMB FOUNDATION AND BEESWAX ADVANCED.

We are compelled again to advance the price of comb foundation, because of the advance in beeswax. This has been slowly increasing in price for two years past, with slight fluctuations. We have to pay now, on an average, 7 to 8c. per lb. more for wax than we did two years ago. We dislike to raise prices, and have been holding off, working on smaller margins, hoping wax would go no higher; but it is impossible longer to sustain our catalogue prices. We will pay for average wax, delivered here, 27c. cash, 30 in trade, and the same will be sold at 33c. per lb. for average, and 38 for selected yellow. Price of all grades of comb foundation is advanced 8 cents per pound over January prices, taking effect June 15.

A. I. ROOT, Medina, Ohio.

MISMATED QUEENS.

Having bought up a few hybrid colonies which we desire to Italianize, we offer for sale some 18 or 20 hybrid queens. To get rid of them early, we will sell them for 50 cents each until disposed of. Some of the queens produce almost all three-banded bees, and their colonies might be pronounced almost pure Italians. As there are occasionally some two-banded bees among them, we will offer them at the price of other hybrids; but at this price we can not pick out those queens having the most Italian bees. You will run your chance of getting very nearly pure Italians at these prices.

A. I. ROOT, Medina, Ohio.

HONEY COLUMN.

CITY MARKETS.

MILWAUKEE.—*Honey*.—The market here for honey is in a fair condition. Old stock getting out of sight, and value being sustained on choice qualities. Quote white 1-lb. sections, choice, 13@14; 1-lb. medium, 11@12; dark, 9@10. Extracted, bbls. and half-bbls., 7@8; dark, 6@6½.—*Beeswax*, 26@30.
June 3. A. V. BISHOP, Milwaukee, Wis.

CHICAGO.—*Honey*.—Selling very slowly at present, as there is very little in 1-lb. sections on the market that is at all desirable; then the small-fruit season accompanied by hot weather, usually causes a lull in the honey-trade. The amount of honey on market is now less than at any corresponding time in 7 years. Choice brings 13@14; off, 10@12; dark, 10.—*Beeswax*, 27@28.
June 8. R. A. BURNETT, Chicago, Ill.

KANSAS CITY.—*Honey*.—The receipts of old crop of comb honey have been quite liberal the last two weeks. Demand lighter, dealers buying only case at a time. We quote: 1-lb. white comb, at 13@14; dark, 10@12. Extracted, very slow sale; white, at 5@6. Dark, at 5.—*Beeswax*, none in market.
June 4. CLEMONS, CLOON & CO., Kansas City, Mo.

ST. LOUIS.—*Honey*.—The season is well over on old honey, and is early for new to be ready for the market. Choice white clover, comb, 12½; common to fair, 8@10. Extracted, choice, 7c; fair, 5@5½, in can.—*Beeswax*, 27@28. W. B. WESTCOTT & CO., St. Louis, Mo.

DETROIT.—*Honey*.—Not much desirable honey left in the market; it is selling slowly at 10@13 cts. Extracted, 7@8.—*Beeswax*, 27@28.
June 9. M. H. HUNT, Bell Branch, Mich.

CINCINNATI.—*Honey*.—Demand for comb honey is slow, and prices nominal. There is but little on the market. Extracted honey is in good demand, and brings 5@8c on arrival, according to quality. We bought to-day the first 4000 lbs. of new choice extracted clover honey.—*Beeswax*, there is a good demand at 24@28 for good to choice yellow on arrival.
CHAS. F. MUTH & SON.
June 10. Cincinnati, O.

ST. LOUIS.—*Honey*.—We have sold the first arrival of new crop of extracted honey at 7½c. Market quiet.—*Beeswax*, prime, in demand at 27.
June 10. D. G. TUTT GROCER CO., St. Louis, Mo.

BOSTON.—*Honey*.—No change in prices. Honey sales very slow. We have recently received a shipment from Michigan, very fine stock, which is an ample supply for us for the summer.
June 11. BLAKE & RIPLEY, Boston, Mass.

Rheumatism * Bees.

No doubt the best bees for curing rheumatism are pure-bred Italians that prove to be good workers and work on red clover.

We have such if you want good stock to work with and to secure you plenty of honey.

Tested queens in May, - \$1.50; in June, - \$1.25
Unt'd " " " - 1.00; 3 for - - 2.50
Unt'd " " June, - 75; 3 for - 2.00

For wholesale prices, nuclei, lbs. of bees, and all kinds of bee-supplies, write for our 16 p. circular.
9tfdb JNO. NEBEL & SON, High Hill, Mo.
Mention this paper.

TAKE NOTICE!

BEFORE placing your Orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. Address

R. H. SCHMIDT & CO.,
21-20db NEW LONDON, Waupaca Co., WIS.
9tfdb

In responding to this advertisement mention GLEANINGS.

Bee-Keeping for Profit

IS THE TITLE OF

Dr. Tinker's New Hand - Book.

It gives his New System of the management of bees complete, telling how to get the largest yields of comb and extracted honey, and make the industry of bee-keeping a profitable one. The claim is made that our old methods and appliances are of such a nature that it does not pay even the expert bee-keeper to keep bees except in very favorable localities. The New Book tells why these failures occur and how to prevent them, giving the general principles essential to a profitable system. The work should be in the hands of every progressive apiarist. It is well illustrated, and will be sent to any address postpaid for 25 cts. Please remit by postal note. Address

DR. G. L. TINKER, New Philadelphia, Ohio.

Please mention this paper.

10tfdb

HOME EMPLOYMENT.—AGENTS
wanted everywhere, for the **HOME JOURNAL**—a grand family paper at \$1 a year. *Big cash premiums.* Sample **FREE**. THOS. G. NEWMAN & SON, 246 East Madison Street, - CHICAGO, ILLS.
In responding to this advertisement mention GLEANINGS.

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

J. STAUFFER & SONS,
16-tfdb Successors to B. J. Miller & Co.,
Nappanee, Ind.

In responding to this advertisement mention GLEANINGS.

HEADQUARTERS IN THE SOUTH.

FACTORY OF BEE-HIVES, ETC.

From now on I will sell my 4-frame nuclei, with Italian queen, at \$3.75. In lots of 5, at \$3.50 each. Untested queens, at \$9.00 per dozen in June; \$8.00 per dozen in July. Satisfaction and safe arrival guaranteed. Twelfth annual catalogue.

9tfdb P. L. VIALLON, Bayou Goula, La.

Please mention this paper.

Bee-Keepers' Supplies.

WHY ♦ SEND ♦ LONG ♦ DISTANCES ?

SEND NAME ON POSTAL CARD FOR MY
NEW PRICE LIST TO

C. P. BISH, Grove City, Mercer Co., Pennsyl'a.

Formerly of St. Joe Sta., Butler Co., Pa.

ESTABLISHED IN 1884.

9tfdb

Please mention this paper.

SECTIONS, \$3 PER 1000.
Foundation, Alsike clover seed, and Japanese buckwheat, cheap as the cheapest. Special prices to dealers. Send for our FREE PRICE LIST. M. H. HUNT, Bell Branch, Mich.

Please mention GLEANINGS.

10tfdb

MUTH'S HONEY - EXTRACTOR,

SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES, HONEY-
SECTIONS, &c., &c.

PERFECTION COLD - BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,
Cincinnati, Ohio.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers." Mention GLEANINGS.

10tfdb

FOLDING PAPER BOXES. CRAWFORD'S SECTION CARTONS ARE THE BEST.

Send for free sample and price list, and find out the reason. A certain fact has come to our knowledge that is worth dollars to you. Send for it.

A. O. CRAWFORD, S. Weymouth, Mass.

12tfdb Please mention this paper.

Attention Bee-Keepers!

Our one-piece V-groove section is made of the whitest basswood, and is guaranteed to have no superior in quality or as folded. This is our specialty.

Hives, frames, crates, cases, and general aparian supplies, manufactured and for sale by

**GOSHEN BEE-SUPPLY CO.,
Goshen, Ind.**

Send 5-cent stamp for sample of our sections.

12tfdb In responding to this advertisement mention GLEANINGS.

ONE PIECE V-GROOVE SECTIONS BY RETURN TRAIN, AT \$3.50 PER 1000. Circular. 12tfdb L. J. TRIPP, Kalamazoo, Mich.

ITALIAN QUEENS

Rearred on the Doolittle plan. Tested, \$1.00; untested, 50c; or more at same price after July 1.

P. BROWER, New Paris, Elkhart Co., Ind.

12tfdb In responding to this advertisement mention GLEANINGS.

For Sale - 10 Colonies Fine Italian Bees in Simplicity hives, full of bees, at \$5.00 per colony. Also 10 colonies hybrids.

CHAS. MCCLAVE, New London, Ohio.

FOR SALE - 60 or more 9-Frame Hives, in good condition, with cap nailed, known as the Frost pattern, at 75 cts. each; 10 for \$5.00. Have been used some.

F. H. McFARLAND,
St. Albans, Vt.

BEES for sale in Simplicity hives, cheap. Address 12 13d W. C. MARTIN, Ashley, Del. Co., Ghio.

BROWN LEGHORNS STILL AHEAD. EGGS, \$1.00 PER 13, \$1.50 PER 26. A. F. BRIGHT, Mazeppa, Minn.
7tfdb

QUEENS.—Fine home-bred Italians, and imported, from Waldensian Valley. Circular free. 10-11-12d CHRISTIAN WECKESSER, Marshallville, O.

FOR PURE ITALIAN BEES, POLAND- China Swine, White and Black Ferrets, White Rabbits, White and Brown Leghorn Chickens, and Mallard Ducks. Address **N. A. KNAPP,** 4tfdb **Rochester, Lorain Co., Ohio.**
12tfdb In responding to this advertisement mention GLEANINGS.

Carniolan Queens.

Send for Descriptive Circular to

DR. S. W. MORRISON, Oxford, Pa.

9tfdb Please mention this paper.

BIG 3-FRAME NUCLEI, WITH QUEEN from imported Italian mother, for \$2.50. Full colonies low. Thirty Rose Comb Brown Leghorn eggs for \$1.00. Safe shipment guaranteed.

10tfdb G. W. GILLET, Wellington, Ohio.

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From June 10th to Oct. 1st.

Why you should purchase of Wood:

He has had many years' experience.

His queen-cells are built in full colonies.

He uses no lamp-nursery.

He is located where there are no black bees, and where foul brood never was known. Fully 95 per cent of his queens prove purely mated.

He fills orders promptly.

He warrants every queen equal to those of any first-class breeder in America.

Price 75 cts. each; \$8.00 for 12.

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A BARGAIN for some one. One hundred colonies of bees in S. frame, double story, and in No. 1 order. Will take \$200.00.
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BRIGHTEST GOLDEN ITALIAN BEES AND QUEENS,

—AND THE—

REDDEST DRONES IN THE WORLD.

Untested, \$1.00 | Tested, \$2.00 | Select tested, \$3.00
Special breeding, guaranteed to please, \$5.00.

L. L. HEARN, - FRENCHVILLE, - W. VA.
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A New Discovery.

THE COMMON-SENSE HONEY-EXTRACTOR is strictly scientific, powerful, durable, handy, clean, and rapid, and differs from all others, and is cheaper than the cheapest at bankrupt prices. CIRCULARS FREE.

REV. A. R. SEAMAN,
New Cumberland, Hancock Co., W. Va.
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CHAFF AND SIMPLICITY HIVES
shipped on receipt of order. Price list free.
11tfdb E. J. SHAY, Thornton, Taylor Co., W. Va.

QUEENS and SUPPLIES.

Untested Italian queens, each \$1.00
Tested 2.00

Send for price list of bees and supplies.

Address **F. W. LAMM,**
(Box 106.) **Somerville, Butler Co., Ohio.**
11tfdb Please mention this paper.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

NOVELTY CO.,

6tfdb Rock Falls, Illinois.

Please mention this paper.

PLEASE NOTICE ADVERTISEMENT IN
GLEANINGS, May 15th. Untested, 50c; test., \$1.
W. M. VICKERY, Hartwell, Hart Co., Ga.

TESTED CARNIOLAN QUEENS, \$2.50
each; untested, \$1, or 6 for \$5. Send for price
list of Italian bees and queens, bred in my Nappanee-
apiary. 8tfdb I. R. GOOD, Vawter Park, Ind.



Vol. XVIII.

JUNE 15, 1890.

No. 12.

TERMS: \$1.00 PER ANNUM, IN ADVANCE;
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single number,
5 cts. Additions to clubs may be
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NOT of the U. P. U., 42 cts. per year extra.

A PLEA FOR MIDDLEMEN, ETC.

OUR GOOD FRIEND MUTH TELLS US SOMETHING
ABOUT SELLING HONEY AT WHOLESALE.

WE have seen a number of articles in bee-jour-
nals in which our friends describe the manner of
disposing of their honey. Home trade is advocated
every time. It has my full sympathy because it is the
least expensive, and a retail price is realized; besides,
we don't need that "middleman," who is looked upon
with suspicion and with envy. He makes the mon-
ey which the producer should make (?). All of us
have seen and heard the expression of such senti-
ments. Our good friends are not aware of the ex-
penses of a dealer in a large city, not even of his
advertising bills, which are the least of his expenses.
When one of our friends peddles his honey from
house to house, and disposes of from 1000 to 10,000
lbs. in a season, he has certainly done a great deal,
and I give him due credit for his energy; but he
takes care of his own interests only, and he could
not sell another quality of honey besides his own,
if he would try to. Different men have different
dispositions, and not many could do as he did.
Some others have other business on hand, after the
honey-season is over, and are glad to sell their hon-
ey to an honorable dealer. He takes care of his
own interests also, otherwise he would not be a
dealer long; but with him there is no difference be-
tween the Canada linden honey and the American
basswood. It is well that this great country of
ours affords a living to all; with your permission,
Bro. Root, I shall endeavor to prove that the dealer
also is of some use to this world.

The dealer can not, like some producers, peddle
his honey, because he buys large lots, and honey of
all qualities. His very existence depends on the
turning of his money, and he is bound to find a

market for such qualities as come within his reach.
The avocation of a dealer also requires energy and
perseverance, and more so than many of our good
friends have an idea of. The sale of choice clover
honey has never caused us any trouble aside from
the desire of selling "more." But there was a time
when we did not know what to do with fall and
Southern honey. We could not dispose of it at cost,
and were glad to find, at last, some printing-roller
makers to use our dark honey. We took care of
buying no more than we could help.

Next came a time when we believed that we
could dispose readily of all the honey the Southern
States could produce. Vanity is not our character-
istic, but we found that we had made a mistake
during a time of plenty, about five or six years ago.
We could not sell as fast as honey came in, by any
means. But it was not so much on account of the
larger arrivals, but because of the slackening of
the demand from the custom which we had believed
to have established. Our trade in Southern hon-
ey is now, perhaps, second to none in the country.

Basswood honey is an article which we could not
dispose of until last winter, when our friend W. J.
Pickard, Richland Center, Wis., sent us two car-
loads. It took quite an effort and some time to find
buyers. But we succeeded in selling from 80,000 to
100,000 lbs. of basswood honey during the winter.
We now hope that our supply won't give out, be-
cause we have established custom for basswood
honey, which we are apt to keep if we can supply
regularly. Manufacturers are prone to make a uni-
form quality of goods.

Who is not acquainted with the horrible (?) flavor
of the horsemint of Texas? The horsemint honey
has been slandered. We had, last fall, a carload of
horsemint from our friend Stachelhausen, Selma,
Texas. For more than two months we could not

make a sale, but had returned to us two barrels from Boston, Mass., and one from Richmond, Va., and several more from nearer by. But at last we found a customer for the much-abused horse-mint honey, and we could have sold several carloads more if we had had it. You would have been surprised, Bro. Root, at the fine flavor of honey-cakes made of the horrible (?) horse-mint.

We had once a large customer for the fine mangrove honey of Florida. When the frost nipped the buds, three years ago, and the supply ceased, we lost that trade. Demarara sugar took the place of the mangrove honey, and we have not regained those customers yet. Horse-mint eclipsed the mangrove last winter; for most of the mangrove honey purchased last fall was still on our hands two months ago, but is gone now.

From the above you see that we can't peddle our honey; but we write to our friends, see them occasionally, and post them as to different qualities, etc.

Our home trade is stimulated in a different manner. Here we see our friends also, and supply every good customer, wholesale and retail, with a fine sample case, a specimen of which will be expressed to you. It contains a dime jar, a half-pound, pound, and two-pound jar of fine clover honey as we offer them for sale. In the upper corner of the case stands a one-pound section of comb honey. The sample case is ornamental, and, very naturally, a conspicuous place in the store is assigned to it. By it our friends and their customers are reminded of us, and we receive their orders by telephone or otherwise, if we fail to see them in time. I will send you a case, empty, for safety's sake.

We have a large trade for honey in our square glass jars, and I believe that you find our very plain labels in most parts of the country. Our square jars are popular, and I doubt whether we should be blessed with the trade we have, without them. We ordered 1000 gross of jars a few months ago, in order to buy them at old prices, and we expect to have disposed of them, filled with honey, before the beginning of next spring, not to speak of the trade we have in empty jars.

In the above I had reference to extracted honey only, which is, for us, by far the best trade. There is no breakage in transit, and losses are caused only when shippers are careless in the selection of their cooperage. We have taken, perhaps, more pains than anybody else in the country to introduce "machine-extracted honey."

Our sales of comb honey during last winter amounted to about 60,000 pounds or more. We received no full carload at any one time, but many a large shipment of most excellent quality in one and two pound sections, and in large and small shipping-cases. We received, also, our share of dark comb honey; i. e., buckwheat honey from the Northwest, and catnip from Missouri. The latter is not as dark as buckwheat, but it is dark comb honey, which is, with us, a troublesome article, if salable at all. Dealers are to blame for its production by their misleading quotations, no difference whether they were made intentionally or in a thoughtless manner. It makes me smile to see quotations of fancy and of medium buckwheat honey. We verily believe that we have as much opportunity of selling buckwheat comb honey as any one of our Eastern competitors, and we ex-

pect to sell our share hereafter. But we know that it has been, and will remain, a cause of disappointment to shippers and buyers. One may raise dark honey enough to supply his own home trade; but to raise it for shipping purposes is against his own interests. Money will be lost with almost every shipment, by at least one party, not to speak of the ill feeling created against the one or the other. We have to render into strained honey all dark comb honey on hand for a certain length of time, and after the cases have become soiled—the only thing we can do with it.

To illustrate my argument, let me give you the following problem: If we pay 5 cents for good dark extracted honey, what should we pay for dark comb honey which we have to render into strained honey? The figure must certainly be unsatisfactory to the shipper, if we want to do justice to ourselves. If we should pay him a price fair to both, our friend would accuse us of dishonesty. However, if he had sent us his honey extracted and in barrels, instead of in combs and neat shipping-cases, his product would have been three or four times the amount; and our transaction would have been pleasant and profitable to both parties. None of us would have been subjected to a pecuniary loss, and none would have been accused of being a "sharpener."

Comb honey must be white, and sections well filled, when the difference is but small in the sales of one and two pound sections, although the one-pound sections will remain the most popular. We want no one-fourth pound nor one-half pound sections.

"Shipping-cases" is another item of which I wish to speak. Of the many different sizes we have received during our existence, small cases, as a rule, have proved to be the most satisfactory. All cases should be glazed, at least on one side. Cases holding 24 one-pound sections answer the purpose. We have had them arrive in two-tier sections just as safe as in one-tier. But cases holding 12 one pound sections, as a rule, arrive safer and sell faster; and, if damaged in transit, the lot can be straightened up easier. Such is our experience. These small cases can be made of $\frac{1}{2}$ -inch stuff, and should not cost above 10 or $12\frac{1}{2}$ cents apiece, including glass.

My article has become longer than I expected; but other business does not allow me much time, otherwise we should perhaps write shorter letters and oftener.

CHAS. F. MUTH.

Cincinnati, O., May, 1890.

Friend M., I am exceedingly glad to get the above paper from you. It always gives me pain when I hear folks uttering wholesale condemnation and complaint against any class of people—that is, people who are engaged in an honorable employment. We have had some experience in selling honey by the carload, but not very much, however, compared to what you have had. But we can fully understand that it requires a man with special ability, and that it is a trade of itself. I congratulate you on the success you have made in introducing honey from special localities. We have had trouble with buckwheat honey, similar to yours. Quite a lot of it is now burdening our shelves. Yesterday the bees made their way in, evidently thinking that, if nobody else wanted it, they could dispose of it to good advantage. Our wagon is offering it at 10 cents a

pound retail, and carrying it to the houses; and even at that price it does not sell. We do not wonder that you had such success with Mrs. Pickard's honey, from Richland Center, Wis. I was present when they were taking it out, and I thought that their basswood honey compared favorably with any honey in the world. If basswood is thoroughly ripened, and is thick, and has no taint nor fermentation, it is, in my opinion, luscious. You know something about having honey returned, as well as ourselves. There is quite a tract of country down in Kentucky and Virginia where the merchants will return every bit of honey as soon as it candies. They say it turns to sugar, and is useless; and during the past winter we have exhausted our logic in trying to convince them that it was all right. Our good friend Capehart, who took the orders, insisted that honey must be melted, and shipped away hot—or, at least, that is pretty nearly what he said. Well, so long as it remained liquid it sold very well; but when a cold wave came, then there came a wail from honey-dealers. I felt as if I should like to get the whole of them together and shake some sense into their heads. Now, friend M., if you can sell honey down there, and explain by circular or by personal letters that candying is not a plain indication of fraud, I shall be glad to have you undertake it. Where bee-keepers like the business of peddling honey, and can dispose of their crop in that way, by all means let them do so; but it certainly is a great piece of folly to find fault with commission men and middlemen indiscriminately. Why, friend M., if it had not been for you and your sturdy energy in working off the product of Texas, Florida, Mississippi, and other like localities, I do not know where our honey business would be just now; and it was news to me to learn that you had made an opening for the great basswood product from Wisconsin. Go on, and don't feel hurt, even if some of our small fry say unwise things occasionally.

DEEP SPACE UNDER FRAMES, ETC.

NOT A SUCCESS.

My experiment in trying to have a deep space under brood-frames through the summer has already come to grief. April 30 I found some comb started under the bottom-bars, and in one case a piece of drone comb, some 8 inches long, built clear down and filled with drone eggs. It was all built of old black wax. Others have succeeded; what causes my failure? My bottom-bars are $\frac{1}{2}$ wide and $\frac{3}{4}$ thick. Perhaps a wider or thicker bottom-bar is needed. If top-bars can be so made that bees will not run comb above them, can not end-bars and bottom-bars be so made as to prevent combs between them? They are certainly less inclined to build comb there than between top-bars. If, however, bottom-bars are made wide, there will certainly be much trouble in having them glued together; for my $\frac{1}{2}$ bottom-bars sometimes touch and are glued together. I need not say what an annoyance it is to attempt to pull out a frame and find it holding fast to the bottom-bar of the next

frame. It is just possible that, in spite of my strong and long feeling against fixed distances, I may think it worth while to try the experiment of a wide frame in all its parts, with spaces at each corner. In any case I want the deep space under the frames in winter, and, if necessary, I will in some way lessen the space in summer.

FLAT COVERS.

Another thing that has not worked as well as I expected is the flat hive-cover. Either the hive or the cover, in too many cases, is just a little out of true, and that lets in cold air in spring. Is there any remedy for this? If I can not do any better I can put quilts or cloths on.

SAGGING OF TOP-BARS.

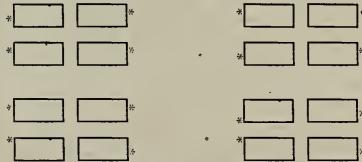
While I am telling my shortcomings, I may as well speak of top-bars. I have always said that I had no trouble with $\frac{3}{8}$ top-bars sagging, although wired without any diagonal wires. This spring I hoed all the brace-combs and propolis off my top-bars for the first time in three or four years, hoping to get the honey-boards to work as well as ever, and I found some places where there was sag enough to make a space of $\frac{1}{2}$ inch between top-bars and cover, instead of $\frac{3}{8}$, as designed. I believe I would rather have top-bars so thick that no sagging need be feared. My top-bars are all an inch wide, except in the few Dovetailed hives I have. These last are $\frac{5}{8}$ wide, and they sagged worse than those 1 inch wide. I think hereafter I shall clean off the tops of my frames every year, as I formerly did.

KEENEY'S PLAN OF WIRING.

I've tried hard to find some fault with the plan, taken with Ernest's improvement on page 372, but I can't do it. If foundation is cut a little too large, so as to be crowded down on the bottom-bar, I don't believe there will be any need of reversing to get combs built down. I can readily believe that $\frac{3}{8}$ top-bars will not sag with this plan, since so few of my $\frac{3}{8}$ top-bars sag with perpendicular wiring without any diagonals. But my bottom-bars, being $\frac{3}{8} \times \frac{3}{8}$, do sag—upward.

ARRANGEMENT OF HIVES.

The lay of the land has much to do with it. In one of my apiaries I have, for the last two years, used a combination of friend Hatch's plan, on page 374, and Ernest's plan on the next page. Perhaps I might say it is simply the first part of Ernest's plan. I like it better than any thing else I ever



tried. Possibly I might like the Hatch plan better; but as there need be only 6 inches space between the hives in each group, I can, without using any more space, have an alley 15 $\frac{1}{2}$ ft. wide where friend Hatch has 10 feet. If space is important, or if it is desired to have the apiary as compact as possible, my plan is better; but then flying bees will trouble more. Where there is no objection to using a large space, friend Hatch's plan is hard to improve on; and if it be desirable to have them closer, the 6 feet between hives, where they face each other, can be reduced to two or three, and the alleys made narrower. Just now my assistant objects to having

the hives facing each other any nearer than six feet; indeed, she objects to their being as near as six feet, in case of swarming. Another thing comes to me that I had not thought of at first. Friend Hatch has less trouble with flying bees in his alleys; but how is it when he is working at a hive? If he sits at the middle of the hive he is just 7 feet in front of a hive, nearly in its line of flight. With my plan, and the same number of hives on the ground, I am 16 feet away from any hive which is facing me. As I spend more time at the hives than I do in the alleys, I believe I like my plan best.

Marengo, Ill., May 20.

C. C. MILLER.

I am somewhat surprised, friend M., that the deep space under the frames has already proven a failure with you. Our good friend Baldridge and one or two others claim them to be a success. Our friend Danzenbaker gives $\frac{1}{8}$ inch under his brood-frames, and has, in connection thereto, an entrance $\frac{1}{8}$ deep, or wide. Mr. D. says that he not only finds nothing is built under the bottom-bars, but that this extra space with a wide entrance forces the bees to enter the supers a little earlier. He argued that bees are anxious to get their stores as far away as possible from the cold and robbers; and if the bottom of the hive were open, or exposed by a wide large entrance, the bees will actually carry their stores where it is close and protected. But if I understand you, your experience doesn't corroborate this, for you have a large entrance.

Now, doctor, I have just been waiting for a good chance to quarrel again with you on your manner of cleating covers. You know I argued, a while ago, that the covers should be let into *grooves* of the cleat, and nailed. You thought that a cleat simply nailed on to the ends of the cover, without grooving, would be just as strong, and better. And now you say your covers are not always true. I have never yet seen one cover of the Dovetailed hive that warped any; and if the Dovetailed hive is nailed true, the hive can not get out of true, on account of the great strength of the corners. Practical tests in the apiary prove this. I feel quite sure, doctor, that a cover-board let into a *groove* in a cleat is much less liable to warp than one dependent on nails alone. In this connection, perhaps I should say that flat covers covered with tin are liable to warp or wind. I notice that quite a number of our customers are ordering these covers with the tin. They will regret it, I feel sure, and for this reason: The upper surface of the board, immediately under the tin, is kept dry; the under surface, next to the bees, is subject to more or less moisture from the cluster. A cover-board not protected by tin receives the moisture from the dew and the rains on its upper surface, and this counterbalances the moisture on its under side. I should be glad to have any one try the experiment with the tinned and untinned *flat* covers, and report. I do not know, doctor, whether you cover with tin or not, but I presume you do not.—I think I can indorse all you say in regard to the sagging of top-bars. I have seen them bend down fully half an inch from a straight line.—I am glad you can not find any fault

with Keeney's plan of wiring. I hope you will try it this season, and report to us a little later.—In regard to the arrangement of hives, the lay of the land certainly has very much to do with it. Trees, stumps, and uneven places, very materially modify any nicely proposed plan that we may have. When we located our basswood apiary we arranged a plan. The ground was a little swampy and uneven in places, and we found ourselves obliged to put the hives just where they will stand level, irrespective of any well-defined plan.

ERNEST.

In addition to the above, friend M., I wish to suggest that a Simplicity cover is made exactly to keep the cold spring air out; and yet you are all going to throw it away, without even a thought of its advantages. Yes, and you coolly ask if there is no remedy for your flat tops and covers; and then, after I gave you the diagonal wires and tin bars that make an absolutely sure thing against sagging, you forgot all about that.

BRACE-COMBS AND BURR-COMBS.

HOW TO PREVENT THEM; ALL IN SPACING, AND NOT IN WIDTH OR THICKNESS OF BEES.

THE following is a private note received from one of our Canadian friends, which will explain itself:

Friend Root:—

Inclosed please find a paper written and read by request of the Oxford Bee-keepers' Association, at Woodstock, on the 21st inst. I think the paper will be helpful by directing attention, especially to the importance of proper bee-spaces. It is the *space* that must be right, regardless of either width or depth of top-bar. A top-bar $\frac{1}{8}$ in. thick only, is, in my opinion, just as safe against burr-combs and brace-combs, provided the spaces be right, as one an inch thicker. A few years ago this same subject was up. I said to my wife that I had a mind to propose to Mr. Root that he visit me; and that if he did not fully agree that the remedy was all in the spacing, after looking over my hives, I would pay all expenses of the trip; but after thinking awhile, she replied, "Oh! well, you know people see things so differently that all might not be satisfactory." So I dropped the matter. I shall not feel hurt if you think the paper of no use, and drop it in the waste-basket.

S. T. PETTIT.

Belmont, Ont., Can., May 27.

The following is the paper:

In all improperly constructed, occupied hives, may be found, in addition to the orthodox brood and drone combs, two other kinds; viz., brace-combs and burr-combs. Now, in order to get rid of, or, more properly, to prevent, the building of the troublesome brace and burr combs, it would be well to inquire into the cause of their construction, or into the conditions most favorable to their construction; or, in other words, why they are built. The brace-comb (if it may be called a comb) is intended for a very different purpose from that of the burr-comb. The former is constructed in position for just what its name implies—a *brace*; and the latter ultimately for store combs. If during a good honey-flow some sealed honey be placed close

together than the bees placed it, they become alarmed; and to prevent more crowding, and to keep things in position, they go to work and build *brace-combs* in the now too small bee-spaces. Upon examination, brace-combs will be found to be studs of hard wax, with, in some cases, a touch of propolis, possessing no small degree of resisting power. Brace-combs will usually also be built in all undersized bee-spaces, so the cause of their presence in almost all cases is quite apparent.

With regard to burr-combs, if we investigate the matter we shall discover the reason why the wayward little workers do so persistently persist in building them. We all know, I presume, that bees are severe economists, and most exacting in that line. They economize heat, time, and every thing pertaining to their welfare. Every available particle of sweets, and every thing that can be utilized by them, is eagerly gathered and stored; but in nothing are they more economical than in the space inclosed within the walls of their domicile. It is their inherent nature to occupy and utilize every space, larger than a bee-space, within their homes; and especially so is this the case at or near the top of the brood-chamber; and now, just at this point, I would ask, Is not the cause of the presence of burr-combs apparent? and does not the remedy readily suggest itself? My experience, running over quite a number of years, says the cure is at our finger-ends; is easily understood, is unpatented, and may be had for the taking—simply adjust all the interior parts of the hive so that a proper bee-space is maintained throughout, and the goal is reached—the joy is yours; for under these conditions there is neither room for burr-combs nor supposed necessity for brace-combs, and but very few of either will be built.

Frames are spaced by different parties, all the way from $1\frac{1}{4}$ in. to $1\frac{1}{2}$ in. from center to center, so it will easily be seen that, in order to form proper bee-spaces, top-bars must be of different widths, according to the spacing practiced.

Top-bars $\frac{3}{8}$ in. square, and spaced $1\frac{1}{8}$ in. from center to center, will form spaces $\frac{1}{2}$ in. by $\frac{5}{8}$ in.; and he who expects that bees will not economize such roomy spaces at the top of the brood-chamber has failed to note one very prominent and important characteristic in bee-nature, and will simply be disappointed. Like noxious weeds, his crop of burr-combs will grow until these spaces are nearly full, and super ventilation well nigh chopped off.

But, what about deep top-bars? will one inch or so of depth prevent burr-combs between top-bar and super? Well, now, I am aware that this point should be approached charily, as so many experienced bee-keepers regard depth of top-bar as having great virtue in that line; but with all due respect for the opinions of others, I will frankly state that, after six or eight years of experience with thick and thin top-bars, I am pretty well convinced that that virtue is not in depth of top-bar, but in correct spacing.

Although my real frame has a top-bar about $\frac{1}{2}$ in. thick, my ideal frame has one only $\frac{1}{8}$ of an inch in depth, and of the necessary width to form correct bee-spaces. Most bee-keepers, I believe, regard $\frac{5}{8}$ of an inch as the bee-space. Well, I will not quarrel with that, for it is worthy of notice that the bees themselves, as yet, are not fully agreed as to what a proper bee-space should be; but I would add that it must not be even a shade more than $\frac{1}{8}$ of an

inch—anywhere between $\frac{3}{8}$ and $\frac{1}{8}$ will do; but between top-bars and supers, $\frac{1}{2}$ of an inch has my decided preference. The top-half of end-bars should be of the same width as the top-bars, and the lower half tapered down to the width of the bottom-bar. The end-bars of my frames are all so made now. In all fairness, it should be admitted that some stocks seem to have a peculiar fondness for burr-combs; and under almost any conditions some embryos will appear in the hives of such bees.

Belmont, Ont., May 20. S. T. PITTET.

Friend P., I have always been greatly averse to thick top-bars, for the reasons you have given. It curtails too much the space we should like to have filled with brood. When the diagonal wires and tin bars were invented, I thought I had solved the great problem by enabling us to use thin top-bars, leaving so much additional space for brood, and at the same time having no sagging. I should be very glad indeed to know you are right in your deductions; but, if I am correct, a great many will not agree with you—at least not until they have gone over the ground carefully and made more experiments. Give my respects to your good wife, and tell her I have long been thinking of making you a call, and that it will not need the additional incentive of having my expenses paid, to bring it about. And now about the bee-space. In our locality it is a very difficult matter to maintain an exact bee-space. I find that old hives in our yard will shrink and swell, under the influence of the weather, $\frac{1}{8}$ inch; and as the frames rest on the rabbits, near the top edge of the hive, this must of necessity vary the bee-space between the upper and lower set of frames. We made some hives two years ago that were just exactly $9\frac{1}{2}$ inches deep. As the L. frame is $9\frac{1}{2}$ inches deep, this would leave $\frac{1}{2}$ inch bee-space on top of the frames. Well, last spring I measured these same hives. Instead of shrinking $\frac{1}{8}$ inch, as I thought they would do, they had actually swelled so that they were $9\frac{1}{2}$ deep. It is quite dry weather now, and their present depth is $9\frac{1}{2}$ inches. I have just measured several of them. If we should have continued dry weather, they might possibly shrink another sixteenth. I must confess that I am very greatly surprised to note the different depths of hives, due to climatic conditions. This may not be true in all localities, but I should feel pretty sure that it would be in most of the Northern States. Now, then, the point comes up, How are we here in Medina, and a good many other places, going to maintain an absolute bee-space, so it shall be the same at all times? I confess I do not know. The question arises, "Is it necessary to have an absolute bee-space, at all times of the year?" It does not matter much if we do have, in the spring and fall or winter, $\frac{1}{2}$ or even $\frac{1}{4}$ inch; but when honey is coming in, and brace-combs naturally start, then is the time we need pretty nearly $\frac{5}{8}$ bee-space: and if the hives are made right we will get it providing the weather is dry. Our new Dovetail-ed hive allows a bee-space of exactly $\frac{5}{8}$ between the brood-frames and sections. As the sections are supported by flat tins on the bottom edges of the super, a little shrinkage

or swelling will not affect the space between the brood-frames and sections. It is a comparatively easy matter to control bee-spaces between shallow supers, and between super and brood-nest; but between an upper and lower set of brood-frames, L. depth, it may not always be uniform. There will be a small variation between a dry and a wet season, with us. Your logic is good in regard to exact bee-spaces; and in localities where they can be maintained uniformly, perhaps a thin top-bar will answer; but with us I fancy we shall need the additional assistance of a deeper and wider top-bar. This is a splendid field for experiment, and I hope many of the readers will test it carefully.

MOVING BEES.

THE TWINE METHOD OF FASTENING HIVES; A BIG TESTIMONIAL FOR IT.

I have just returned from moving 40 colonies of bees with an ordinary farm wagon, without springs, over quite a rough road, some 8 miles, to an out-apiary, with more ease and expedition than I ever did before (and I have moved many hundred colonies, and used all sorts and methods of fastening). I used the twine fastened as given by Ernest, on page 252, April 1; and though exceedingly busy I write this to let some one who has bees yet to move, know that the method is a decided success, if ordinary precautions are used, and common sense exercised. I hauled 20 at a load, and with each colony in an old-style Heddon hive. I used two half-story supers filled with sections and starters, which made it more difficult to fasten, and more cumbersome to handle than single bodies would have been. The bottoms were all loose—nothing nailed or fastened, except by the cord, which was about the size of an ordinary clothes-line. I took the precaution, however, to secure the two parts, where they come close together on the top, by a smaller piece of twine, so as to prevent all possibility of slipping. To enumerate the advantages of this method, I will say that time and temper are saved in preparing the colonies for shipment; no nails to mar or split cover, hives, or bottom, and they can be undone in one-fourth the time it usually takes by any of the old methods. Thanks are due to the editor of GLEANINGS for giving those of us who must move our colonies to out-apiaries for so great an improvement, say I, and all will join me who try it.

Belleville, Ill., June 2.

E. T. FLANAGAN.

Yes, sir, friend Flanagan, you are right. The twine method of fastening hives for moving bees is rapid, cheap, and, with ordinary care, safe. No little thing like this ever gave me more real pleasure to give to the bee-keeping world than this, because I knew it was good. Our Mr. Ward, the teamster, invented the plan. I hope our readers who have any thing to do with moving bees will give the plan a trial. I have explained it to our packers, and they are actually sending out hives, for short distances, by freight and express, tied by this plan, with no crating whatever. For particulars, see page 252, April 1.

MAKING THE BEST OF EVERY THING.

HOW TO GET ALONG; WHAT TO DO WITH DISAPPOINTMENTS, ACCIDENTS, AND STUMBLING-BLOCKS.

Friend Root—The Barnes saw that I ordered of you the 12th of this month came to Concord yesterday evening, so I took a spring wagon and went after it this evening, and brought it home, and thought I would set it up to-night; but after opening the box I found the arm, or support, that the journal of the fly-wheel rests on, was broken in three pieces, and one end of the mandrel was sprung—done in shipping, for I heard those pieces rattling when the railroad men rolled it out of the freight-room. Now, I shall have to get a new support for the fly-wheel, and a new mandrel, before I can use the mill. I think the company ought to send them free, and I will leave it to you to fix the matter with them; but have them sent immediately, and I will do whatever you say, for I have confidence enough in you to believe that you will do just the best you can under the circumstances.

Poplar Flat, Ky., May 27.

L. C. CALVERT.

Later, May 31.—Well, friend Root, my mill coming in the shape it did gave me the blues, and I could not help it; but I never went to sleep after going to bed until I made up my mind to try my saw next morning, so I got up early and went to putting it together. I took a strip of plank and laid the broken arm on it, and very carefully put the pieces (for it was broken in three pieces) together, and marked it off and cut a bed in the wood for it, and then screwed a block over it, and put the mill up and tried it, and it ran all right. Now for the mandrel. I put the crooked end in its box, and screwed the box fast in my bench-vise, then made a gauge fast to the bench, and turned the mandrel until it came to the point where it was furthest from the gauge; then I carefully sprung it and kept on until I could turn it clear round, and it would just touch the gauge all the time. I put it in and started the mill, and you ought to have seen the blues go out at the back door of the shop. I ran the mill the rest of that day, and Thursday and part of Friday, and it has cut over 2000 feet, line measure, and now I feel as if I were almost fixed for running a hive-factory. I can say that the mill will do all that it is recommended to do, and I am well pleased. But that broken arm, or support, for the fly-wheel, I want sent, but I am in no hurry for it. Any time will do. I think it could be sent by mail about as cheap as any way, as it is not very heavy. As you stand to operate the mill, it is the left-hand side that the broken piece is on.

L. C. C.

Well done, my good friend C. How many times in my daily travels about the grounds and the factory I find things come to a dead standstill by some break-down, disappointment, or mishap! Very often, time enough is spent in severely censuring, to have gone to work and started things going again. I have before written in regard to people who have a knack of mending things. Oh what a need there is in this world for people who are good at patching up broken tools and machinery! It is true, in the above case, that the fault lay either with the shipper or transportation companies, or both; and I have known people to refuse to take a thing from the depot because

of some trifling injury. Within a month a lot of basswood-trees were refused because the tops had been bruised by standing them up in the car; therefore they were left at the station, to dry up and spoil. Now, I have had large experience with railroad companies and manufacturers, and business men almost all over the world; and with few and rare exceptions my advice is, to take your goods and pay charges. If there is an overcharge, call your agent to witness the state of affairs. If the goods are damaged or broken, do the same. Then take your goods and repair the mischief as well as you can. Make out your bill for damages and trouble, in a fair and Christianlike way. Present the matter as an honest man should, and write to the faulty ones as you would write or speak to honest Christian men. To the railroad companies I often say, "Now, friends, the above are the facts as nearly as I can give them. If you see fit to pay me for my trouble, I shall be very thankful; but if you do not, I shall shoulder it as best I can, and try not to have any hard feelings." Such a letter almost always brings liberal treatment. And it is the same way with a manufacturer or dealer. A mild or pleasant letter to begin with will certainly do no harm. If it should transpire, however, that you have been duped and swindled by somebody who has no thought of making the matter good, then, but not before then, is the time to bring forward your artillery and fight for your rights. I am well acquainted with the manufacturers of the Barnes saws; and if they do not, in answer to the above, treat our friend Calvert handsomely, then I shall be mistaken. I have thought sometimes that they erred on the side of too much charity. In our work, all ordinary breaks in machinery are carried to the blacksmith. Very often, however, where a casting is broken there is no way but to send to the maker for a new piece. Frequently, however, we can hold the broken pieces together by a little ingenuity, so as to use the implement or tool until the missing part comes.

FIVE-BANDED ITALIANS, ETC.

PROF. COOK GIVES US SOME FACTS.

MR. JACOB T. TIMPE, Grand Ledge, Michigan, sends me some bees which he requests me to examine and give my opinion, through GLEANINGS, as to the number of bands, and as to their race or blood. These are, I believe, five-banded Italians. They are very yellow and very beautiful. The five bands are so plainly shown that no one could fail to discover them. Mr. Timpe asks if I should suspect them to be in any sense Cyprians, or that they might have any Cyprian blood in them. I think not. I think they are Italians. I have often seen these very yellow Italian bees. I believe I could take any Italian bees, and, by breeding with color alone in view, I could very soon get four or five banded bees. It is as easy to breed for the yellow as the white, which latter gives us the "albinos." I have no doubt but these bees are five-banded Italians. I should expect them to be very gentle, as they are very beautiful.

HERMAPHRODITE BEE.

Mr. Timpe also sends me a very interesting bee. I am much interested in such specimens. They are very curious, and show that the bee-keeper is a close observer, to detect the freak. This bee has the eyes and mouth organs of a drone, the antennæ of a worker, as to number of joints—twelve; one antenna the form of a worker, the other a drone, the body and wings of a worker, a sting, while the legs on one side are like those of a worker, while those on the other are regular drone legs. I have seen but one other case of equal interest. In that, one side is drone, the other worker, as I reported at the time in GLEANINGS.

NEW YORK WEEVILS.

MR. A. TROXEL, Nankin, Ohio, wishes to know through GLEANINGS the names and habits of two large gray beetles which he has sent me. These are weevils, as is at once evident by their long snout. This is the New York weevil, *Ilycerus noveboracensis*. It is one of our largest weevils. One of these is two cm., or .8 of an inch, long, though it is very large, even for this species. They often eat into the branches of apple-trees, and so girdle the twigs. If they were very numerous they would do much damage; but as they have been well known for years, and have never been so numerous as to cause alarm, I think we need not greatly fear them.

TACHINA FLIES.

If any one will look at page 424, Fig. 214, of the 14th thousand of my Manual he will see the figure of a tachina fly. These flies closely resemble a house-fly, to which they are closely related. They lay their eggs on other insects, bees included. The maggots that come from these eggs bore into the victimized insect, and wax fat at its expense. Thus the victim becomes at the same time food and home for the parasite. In most cases this tachina fly does great good, as it destroys hosts of our worst insect-pests. But when they attack bees, and kill them, it becomes quite another matter; then they are our enemies, not our friends.

It is one of these tachina flies, without doubt, that is destroying the bees of Mr. J. S. Lummitt, Bakenill, Tenn. He says the bees lie about the hive dead, and, when examined, he finds the maggot inside. This is just as I have always found this parasite, so I have no doubt but that I have decided correctly in this case. I have written to Mr. L. for specimens of the lately dead bees. As soon as I get them I will rear the flies and then I will illustrate and describe the species that is doing the mischief in Mr. L.'s apiary.

THE CEREALS AND GRASSES NOT HONEY-PLANTS.

In reply to the query of Prof. B. F. Koons, let me say that I have never seen bees working on any of our cereals—wheat, oats, barley, or rye—nor on any of our grasses, for either honey or pollen. So in answer to his question: "Do bees work on wheat, rye, oats, or grasses, either for honey or pollen, and thereby bear an important part in the fertilization of such plants?" I answer, unhesitatingly, no. Dr. W. J. Beal (see his valuable work on grasses, Vol. I.) states that he has repeatedly seen honey-bees working for pollen early in the day on tall meadow fescue (*Festuca arundinacea*). He says the flowers of most grasses, except where close fertilized, are usually anemophilous; that is, fertilized by the aid of the wind. Without doubt, insects do

not serve to cross-fertilize many of the grasses. Tall meadow fescue and buffalo grass may form exceptions.

In case of the cereals, all except rye, perhaps, are close fertilized, and thus our observation—not seeing the bees on the plants—and also the structure of the flowers, alike prove that bees take no part in their fertilization.

We may, it is true, see bees working on both the cereals and the grasses. In such cases we shall generally find plant-lice on the grass or grain, and the bees are after the nectar secreted by the insects. In case of ergotized grain or grasses—those bearing ergot—we may find bees swarming on them, as this fungus secretes a nectar which is very attractive to bees. So the mere seeing of bees around grass or grain is not conclusive that they are in quest of pollen. We must examine closely, when usually we shall find the nectar-secreting aphides or ergot.

In conclusion we may say that, while bees do act as very important aids in fertilizing nearly all our plants and vegetables—nearly all with showy or odorous flowers, they do not thus minister to the welfare of the grasses or cereals.

BEE-MITES.

It is never quite safe to diagnose a case till you have seen the patient; but I have no doubt that the small "mites" which are vexing Mr. S. R. Morris, Bloomingburg, O., are mites. Very likely they are the same that I have illustrated in "Bee-Keeper's Guide," 13th edition, page 430. These little eight-legged mites are soft, so that when slightly pressed they will be crushed and leave a red stain. Mr. M. asks how they can be destroyed, or how he can get rid of them, as he regards them as even worse than ants. As I have never had a chance to experiment, I can only suggest. I would propose that a wire gauze screen be put above the bees, so as to keep them away and then place cloth or paper, with some sticky substance on it, for the mites to attack. They will stick and so can be cleaned out. The sticky fly-paper might be used. If it does not work—I think it would—try greased paper—paper smeared with lard or molasses. The wire keeps the bees away, while the smaller mites pass through to the adhesive paste, and are caught. A screen cover and all could be rigged for a single hive, and, if successful, it could be used on the hives successively till all are freed.

THE SKINKS.

Mr. C. E. Hardesty, Connotton, O., sends me a small skink which he wishes me to comment upon for GLEANINGS. This is one of the lizards, or swifts. The Skink family have broad heads. This one is bright orange, prettily marked with black dots. It is too small and young for me to name. The lizards, swifts, or skinks, have four legs, long tails, and can run very rapidly, hence the common name, swifts. Like the joint-snake, or glass snake—really no snake at all, but the joint or glass lizard—already described in GLEANINGS, which, as will be remembered, though a lizard, has no legs, these swifts are loosely joined at the vertebrae, so that the tail breaks off very easily. Some of the skinks are very pretty, and are worthy to be admired, if people would drop their prejudice and not frown upon every thing that creeps or crawls.

The dread felt for lizards is entirely groundless. They are as safe to handle as kittens, and may be fondled as fearlessly, as they can do no one any

harm. The skinks feed on insects and other small animals, and are not in any way harmful.

A. J. COOK.

Agricultural College, Mich., June 6.

Why, old friend, is it indeed true that lizards are harmless? I have often admired their bright little eyes, and felt like patting them on the back; but it is entirely new to me that they may be fondled as fearlessly as kittens. Now, why in the world don't you have a museum of pet lizards? You might have it somewhere in the neighborhood of that pet bear. By the way, give my respects to his bearship, accompanied with a bottle of honey, and charge the honey to the account of A. I. Root.

LUTHER'S SWARMING-IMPLEMENT.

THE FOUNTAIN-PUMP.

I have used a set of swarming-tools three years, and I think them very good. I can take down swarms that have clustered high or low in trees. I can stand on the ground and get a swarm that is 20 ft. high, or I can go up 20 feet on my ladder and get them if they are 38 feet from the ground. I use an extension ladder, each section 12 ft. long, and two basswood poles, each 16 ft. long. No. 1 is $\frac{3}{4}$ in.



square, with a board 2×8 , hollowed at the ends, to form a hook, when the pole is nailed to the edge of it. The end of the board is to be 8 inches from the end of the pole. No. 2 is $1\frac{3}{4} \times 1\frac{3}{4}$ in., with the face of the pulley toward the basket. There is a cord 25 ft. long, with a snap at one end, also a small staple driven into the pole about 11 ft. from the pulley to hook the snap into when not attached to the swarming-basket. The pulley is a common window-frame pulley, put in near the end of the pole, the same as is put in a window-frame.

The way I fix my baskets, I take a No. 10 wire, bend it in the form of a bail, and put the ends through the rim of the basket and bend the lower

end to the hook around a splint. The handle needs to be 12 or 15 in. above the top of the basket. I have a string 2 ft. long hanging at the bottom of the basket, to take hold of to shake the bees out. I use a small market-basket 12 in. long, 8 wide, and 6 deep. I think they cluster on it better than on peach-baskets. I also have hooks made of heavy wire, to hook over limbs to hang up baskets with bees in, to wait until I can get time to run them into the hives. The way I manage is this:

As soon as a swarm has gathered on a tree, I go with my basket and poles, hang pole No. 1 on a limb where I can easily reach it when wanted (see drawing). Pole No. 2 I hold so as to get the basket close up to the bees; let it lean against the limb, when I hold cord and pole with left hand, then take the small pole in my right hand, and, placing the upper end against the limb the bees are on, give the pole a quick shove up, striking the hook against the limb. I then lower or swing the basket 2 or 3 ft., and wait until most of the bees have settled on the basket, after which I let the basket down so I can take hold of the bail, and unhook the snap.

I now take a look over the apiary, to see if there are any swarms in the air. If there are, I hang the basket of bees in the shade, to wait until convenient to care for them. If there are more than one swarm in the air at once, I use the force-pump to keep them separate; and as soon as one clusters on a limb, I proceed as before with baskets and poles until all are in the baskets, then run them into the hives.

I had 24 colonies last year, and three baskets were as many as I had in use at any one time. I inclose a drawing of my device, made by Master Frank M. Silverthorn, one of my neighbors, who has taken but 8 lessons in the art, of a teacher. He is also somewhat interested in bee-keeping.

STEPHEN LUTHER.

Fairview, Pa., March 4, 1890.

DISADVANTAGES OF FIXED FRAMES.

DR. MILLER MILLER DISCUSSES THE PLAN PRO AND CON.

SHALL we ever get any thing settled—settled to stay? No sooner do we get settled down upon any thing than some one stirs it all up again. And now comes Ernest with his "fixed distances;" and when he starts on a thing he's such an intense chap! He's so Ernest! But, why doesn't he spell his name one way or the other—either Ernst, in German, or the English translation, Earnest?

But, about the "fixed distances," Ernest, don't you know that, when you were wearing short pants, it was pretty generally settled that we didn't want the inconvenience of fixed frames? There are still in use, if I mistake not, in that country from which you get your name, hives that open at the side, allowing the first frame to be pulled out sidewise with a hook, then the next, and so on, obliging you to take out every frame if you want to get the last one. The closed frame, as in the American, was an improvement on this, for you could get at the frames from the top; and after taking out the first frame you could move the others along to get out any one you wished. But that movable side wasn't liked as well as a solid box, and it was so much nicer to be able to lift out any frame you wished, simply by moving the others a little to one side. You were

started on this tack by the need of something to keep frames fixed when hauling to and from out-apiaries. But I have never felt the need of this. I haul my bees home in the fall, with no other fastening than that which the bees have made, and haul them back in the spring the same way. In fact, I expect to haul my bees to the out-apiaries this spring without taking off a cover, from the time they were hauled home last fall. I wondered at your saying, on page 99, that you had so much trouble hauling, till I remembered that you had $\frac{1}{2}$ top-bars. Mine are one inch, and I believe there is a great difference in the stability of the two. Yours will swing with good deal less shake than mine; and if we are to have wide top-bars, perhaps you will not be so anxious for the staples or any other toggery of that kind. But you say I am prejudiced. I suppose I am. I've always had loose frames, and never handled any others except once, and then I didn't like them. But your earnestness in the matter, and your lugging around those spacing arrangements with you at the Ohio convention, have made me do some thinking, and I'll try to talk fairly about

SOME ADVANTAGES OF FIXED FRAMES.

I must admit, that it is a nice thing to have frames so fixed that there is no kind of danger that they will get out of place in hauling or handling, that you can pick up an empty hive and carelessly set it down where you want to hive a swarm without having to stop and arrange all the spacing. Then, too, if you could have it without the attendant disadvantages, and without too much trouble and expense, it would be nice to have your frames so that you can instantly and certainly space them just at the distance you want them. It takes time to space with the fingers. After you have put in all your frames, spacing them as you go, you find you have a quarter or half an inch more in the last space than you want, and then all must be readjusted. And then if we are to do without honey-boards, and depend upon spacing a certain distance, say $\frac{1}{8}$, I suppose that $\frac{1}{8}$ must be exact. If you spend 15 minutes in spacing loose frames with your fingers, I don't know that you can get $\frac{1}{8}$ exact—certainly not so exact as you can by instantly pushing them up against some spacing arrangement which allows them to go just so far and no further. With such an arrangement there is not the same chance for mistake or carelessness. More than once I have found two frames spaced apart twice as far as they should be, or pinched up together till almost touching. Such things could not be when frames are forced to be just right if got into the hive at all.

All these things considered, especially if we must have exact spacing, it may be well enough to re-try some spacing-device—I don't mean settle positively upon it, but give it a fair trial. So it may be well enough to ask in advance,

WHAT SPACER SHALL WE TRY?

Some of them are too much like the closed end-bars, requiring a movable side. And now I may as well confess that, for several years, I have been using what is practically a side-opening hive. I used eight brood-frames in a ten-frame hive, with a division-board at the side; and to all intents and purposes that made it a side-opening hive. Then when I changed my ten-frame hives last year to eight-frame, I made them $1\frac{1}{2}$ wide inside, to correspond with my supers. Spacing the top-bars $1\frac{1}{2}$ from center to center left a space of $1\frac{1}{2}$ inch at one side,

and this I filled up with a dummy. So you see I was in a measure forced into it; but I have found my present arrangement so very convenient that, if I were commencing every thing anew, I would make an eight-frame hive 12½ inches wide, and put in a dummy ½ thick. One special advantage is, that by taking out this dummy I can move the frames along and handle any one I wish, without setting a frame on the ground to let me get at the rest. But I should not want a closed-end frame—at least, I think I shouldn't. I think we want a spacer that, when a frame is lifted a quarter of an inch, it will leave the frame just as free as if there were no spacer in the hive. I don't like Phelps' staples, but I do like his hemispherical-headed brass furniture-nails better than any thing else I have seen. They must work smoothly. There can't be any catching about them. They are easily put on any frame, even without shaking off the bees. They are the least likely to dull an uncapping-knife. I don't know just how much should be conceded to the uncapping-knife. Comb-honey men need not consider it, neither need extracting men, if they do not extract from brood-frames, and I think brood-frames are extracted less and less.

Now, if you don't find something better, get some of the right size of these furniture-nails, tell us how you will sell them, together with a push-stick made just right to push them in, and a good many of us may want to give the Phelps plan a fair trial.

Marengo, Ill., Mar. 21. C. C. MILLER.

Friend M., don't lay the present fixed-distance bubble to me. If it should burst perhaps I shouldn't want to father it. Yes, doctor, there was a time when I wore short pants, when there was an old Quinby closed-end hive in one corner of the apiary. I was afraid of bees in those days, and, of course, had no practical knowledge of the terrors of fixed distances as found in Quinby frames. But things are changing a little bit now. As I have before said, out-apiaries have necessitated some sort of frame that is better for moving bees; and it is very natural to look to fixed distances to help us out. Another consideration comes in; and that is, there are very few bee-keepers who space their frames properly. Farmer bee-keepers almost never have them spaced right. Day before yesterday an old bee-keeper brought in four colonies. When he arrived here the bees were escaping from under the cover. I said, "Have you got the frames properly fastened, so they will not shake about?" "Oh, ya; dey all fas'nd tide." Our apiarist took the hives and put them in position. Next day I asked him whether the frames had been properly stuck up. He smiled a little, and said the combs were spaced sometimes an inch apart, and sometimes an inch and a half, and from that down to a quarter of an inch. The spaces between the combs were almost solidly bridged with brace-combs. Yes, "dey vas all fas'nd tide," and our friend from Holland was right. Now, if this bee-keeper had some sort of a spacing-device to his frames, he probably would have put the combs the right distance apart. I have found, in buying up bees, that farmers and small bee-keepers scarcely ever have their frames properly spaced, and, as a consequence, they never move the frames, and

for a very good reason. Such combs are fixed in a way that practical bee-keepers do not want them. Another consideration, exact spacing helps materially to diminish burr-combs, and, as you say, spacers will probably save considerable time.—In regard to those furniture nails, friend M., we have so many irons in the fire now that we will not dare to advertise them. As they are something that can be obtained at almost any furniture store, any one who desires to try them can obtain them readily. If there should be a demand for them, of course we will furnish them.

ERNEST.

FLORIDA.

AN INTERESTING LETTER FROM AN A B C SCHOLAR; GARDENS AND BEES.

Editor Gleanings:—Tourists, visitors, invalids, and winter residents, have about all shaken the dust of Florida from their feet; and those of us who don't want to, or can't get away, are left to enjoy this most beautiful of all Florida seasons—the summer. Those who have seen the State in winter only, can have little idea of the fresh and becoming dress Nature puts on when the rainy season comes; and instead of dormant trees, dried and yellow grasses, and bare, white sand, we have every grass root, and weed and shrub and tree in full leaf and flower. We are told that the past winter and spring has been "exceptional," from a weather point of view; but as that is what we immigrants invariably hear regarding every unpleasant occurrence in weather or business, we have almost come to consider the exception the rule, and pronounce Florida climate rather uncertain.

We have greater changes of temperature, and more of them, than is generally supposed. For instance, on the 14th and 15th of last March the mercury dropped from 90 to 24° in the course of 36 hours. This was "exceptional;" but it is not at all uncommon for the tail of one of your northwestern blizzards to switch across our peninsula, driving the mercury very near the frost-point. Then the wet and dry seasons do not always come as per schedule. In 1889 the rainfall, accurately measured in Orlando by Dr. Thos. Baker, was a trifle over 5 ft. This year the total, up to May 1, is less than 4 inches.

Orange-groves should bloom in February instead of April, as this year. This tardiness proved fortunate, as, on account of the dormant condition of the trees, the frost of March 15 did little damage to bearing groves, except where they had been forced ahead by the use of fertilizers and irrigation. I am not an orange-grower, but I have a few set trees about my home, which came to grief in this way. When the frost came they were a perfect mass of bloom and tender foliage, and by noon of the next day they were the sickest-looking trees imaginable. But our best-remembered lessons are taught by experience; and now I think it will be some years, at least, before we try to turn another dry winter of discontent into a glorious summer by using phosphate and artificial rain. The vegetable-gardeners lost heavily, as that night made almost a clean sweep of tomatoes, potatoes, beans, peas, egg-plant, squashes, corn, etc., and the season was too far advanced to plant again with much chance for a crop.

For although this is called the land of perpetual summer, one can not plant just at any time.

We have our winter gardens and fall gardens; but the unsophisticated Yankee who plants the common garden vegetables between March and September will have have an opportunity to parallel the bee-men's biggest story of "spring dwindling." There are showers and sunshine in abundance, conditions under which one would think the gardens ought to boom; but they don't.

In our market, the quart measure is the standard, and the nickel the smallest coin that will buy anything. As to prices, would not some of your Ohio gardeners delight in selling their tomatoes at 20 cts. a quart? That has been the price here for the last two months, and they are small tomatoes, and few in a quart too. Very poor celery is 25 cts. a stalk; lettuce, 5 cts. a head; potatoes, 50 cts. a peck; onions, 10 cts. a quart; string beans, 5 cts. a quart; strawberries are cheap now, at 25 cts. a box. Sweet potatoes are one of the very few vegetables that flourish in summer, and are always cheap—from 40 to 75 cts. per bushel. We do not plant slips, as you do, but lay a foot or eighteen inches of the vine across the ridge, and push it into the earth with a forked stick, and in a few days it sends out new roots and leaves.

The swarm of bees, my first and dearest, in more than one sense, about which I wrote you last fall, picked up a little after the robbers ceased paying their unwelcome attentions, but it was not more than a good-sized nucleus when orange-blossoms came in April. But they proved themselves "hustlers" then, and speedily filled their hive with brood and honey. As I wanted experience in manipulating them, more than honey, I divided them a short time ago, and now have a virgin queen five days old, on the three combs I took from the old hive.

Now I must tell you how I got a swarm out of a barrel, and stop. They were runaways, which a negro had caught a mile or so from town, and shaken into a barrel which had no head in either end. For a cover he set a heavy box over them. I bought them, and early one foggy morning my ten-year-old boy Don and I went to bring them home. I had a light box, fixed so as to hold four or five frames, and proposed to transfer their combs if they were large enough; if not, to transfer the bees alone. My first move was to lift that box off the barrel; and if ever I had a "bee in my bonnet" it was a second or two after. They said, "What are you at here? Get out of this!" in good English. So I set the box back and took a little time to consider their proposition. I had found a case to which "Directions for Transferring," as per A B C book, comprehensive as they are, would not apply, and I had to make some of my own. First, we fired up the cold-blast smoker, and smoked them till they couldn't wink. Then I turned the box upside down again, and set it to one side. A few combs were fastened to it, and seemed very soft—so much so that they all fell over to one side as I turned the box. Then I put my little hive where the barrel stood, and jarred the bees into and around it, mostly around it, as it was small and the barrel big. The combs were all too short to reach across the frames; but I put three of them in, upside down, so that the heaviest part would rest on the bottom-bar, and hung them in my box. On a comb not larger than my hand I found the queen, and put her safely into the hive. Now, how to get the bees

in was the question. I could not wait for them to go in of their own accord, as I wanted to take them away at once. There was a narrow alighting-board on my box, so I nailed down the lid, and, making a little paddle, I began shoving them toward the entrance. When I got a bunch of them on the alighting-board I would gently crowd them up to the entrance, and, by making haste slowly, I soon had all but a few stragglers safely housed. Then I nailed the entrance shut, put the box under my arm, and walked home with my prize. How much we enjoyed the early morning walk, the dewy pine woods, and our success, you "bee brethren" will realize if you recall your early experiences when the glamour of novelty was with you.

Just one question: Do any bee-keepers use the crosswise Simplicity frame? I have made my own hives and frames, and, either by mistake or for some now forgotten reason, made the first frames crosswise, and all since. I handled some long Simplicity frames for a neighbor, and do not like them at all, compared with my own. E. J. BAIRD.

Orlando, Fla., May 20, 1890.

Friend B., the crosswise Simplicity frames have been in use for many years, and there has been once or twice a boom on them; but I suppose that most bee-keepers, like ourselves, became disgusted with having two kinds of frames in the apiary; and as the greater part of the frames in use are the regular Langstroth, the crosswise were sooner or later ruled out. I do not know of anybody now that uses them to any extent. The only objection is, they are out of the beaten track.

THE GREAT FLOOD OF THE MISSISSIPPI.

THE OVERFLOW AMONG THE HOMES OF BEE-KEEPERS; THE PROSPECTS FOR A CROP OF HONEY.

Bro. Root—The greatest overflow of the Mississippi Valley has passed, and all the planters are busy with their preparations for the coming season. Planting cotton is almost completed, and much of it is up, and ready for the hoe and plow. The prospect for the future is very encouraging, and I have no doubt that a large cotton crop will be made. When the year closes, one would scarcely realize that such a flood could have passed over this rich alluvial country, and its ravages so soon obliterated. The corn crop will be small, as it requires to be planted early, so as to avoid the summer drought. A large quantity of millet and peas will be planted for fodder.

The overflow was $2\frac{1}{2}$ feet higher over the country than I have ever known it, having resided here from my birth. The loss of stock was immense, especially cattle. Most of the work stock was saved. Thousands of cattle were driven on to the few high ridges of land above the flood, and a large portion perished of starvation. The destruction of human life was more than one would suppose. More than twenty persons were drowned within a radius of twenty miles of this city. My friend, W. G. McLendon, whom you may know as a large bee-keeper of Chicot County, Ark., lost his son, three years old, who fell from the piazza into the water, four feet deep, while his mother and father were away some distance from the house feeding the cattle that were located on a scaffold. No one saw him at the

time, and his body was not recovered for three days. We can well imagine their grief. He saved his bees, 180 colonies, by elevating them on a scaffold. The levees will hereafter be immensely strengthened, and I hope never to see such an inundation again.

My bees escaped the overflow, as the southern half of the city, with a large district adjoining it, was protected by a ridge of land above the water, where my bees were situated.

The honey-flow now is good. I will commence extracting to-morrow. All the white clover was drowned except that on the high ridges, and that was consumed by the starving cattle. The swamp woodbine, rattan, and wild grapes, persimmon, and many other forest trees, are in bloom. I hope yet to have a good yield of honey. I gave my bees a thorough overhauling, and they are in excellent condition. I have very little trouble with robbers. I use small square pieces of mosquito netting, with cords attached to each corner; and when there is the least evidence of robbing I tie them over the front of the hive. It gives plenty of ventilation to the bees in the hive, and they soon recover from their demoralization; and when the netting is removed they are ready to make a good defense of their home. I rarely keep the net on more than half an hour, unless the robbers have entered the hives in great numbers. I have large nets to envelop the entire hive, when the bees can gain entrance at the top or sides. The netting is my only resort; and as an ounce of prevention is worth a pound of cure, you can not use it too soon.

I devote my apiaries to extracted honey, reserving a couple of hives for comb honey for my own family use, as there is no profit in comb honey in this country.

I leave for Mount Eagle, Tenn., about the 10th of June, where I will devote a few weeks to my apiary there.

O. M. BLANTON.

Greenville, Miss., May 26.

Friend B., when we are tempted to complain of too much rain again, we will remember your sad troubles along the banks of the Mississippi. What a sad, sad story you tell us—a little one only three years old, drowning, because he fell from the piazza of his home! May God be with the poor father and mother.

RAMBLE NO. 25.

RAMBLER IS INVITED TO A DIME SOCIAL.

FROM Fort Plain we rolled gracefully along westward on the Central R. R. We had made up our mind to stop at Oriskany and see Mr. W. E. Clark, ex-president of the N. Y. B. K. A.; but we learned that a sea of three miles of mud lay between the station and residence, and all we could do was to look away across the sea and imagine that Bro. Clark was hard at work tacking leather to those best bellows-smokers of his. We reached Rome about noon; didn't see much evidence of apiculture here, but the people seemed to be very friendly. It was about dinner time, and two fine gentlemen said to me, "Let's go in here and have a dime social."

We accepted the invitation with alacrity, for at home our church had a real good dime social. We escorted the widow Dibble, and ate pumpkin

pie, peanuts, and popcorn to edification, and raised almost \$4.00 for etceteras for the minister's wife, and also for a pair of magnetic insoles for her shoes.



A DIME SOCIAL.

She, like other females, is troubled with cold feet. It is said, on this account the magnetic-insole trade is heavy among the fair sex. Well, my alacrity came very near ruining me. I am a total abstainer, teetotaler, and "prohib;" and when these fine gentlemen whisked me up to a bar, where vile compounds are sold, and asked me what I would take for a dime social, I was sorely tempted to say brandy with sugar; but I smote the tempter, and won the victory. Said I, "I'll take pumpkin pie;" and these fine men and the dispenser of drinks just laughed the Rambler to scorn. Said I, "My friends, which is better to take, a piece of pumpkin pie, and go hence with a clear head and untangled feet, or that vile stuff that will roll you in the gutter, or heap abuse upon your family?"

Their hilarity visibly subsided, and I withdrew in good order, and I hope my little lecture and stand for principle had a good effect.

Not far from Rome we had a fine visit with an old-time bee-keeper, who has the cognomen of James Moore, aged 83. In war times he had 125 colonies; but they had all died out; clover had killed out, and the bees could get nothing but weed honey, and they could not winter upon it. There's no earthly use to try to keep bees without a good stand of clover.

Said I, "Bee-keepers now feed sugar or taffy, if they find poor honey in a hive."

"Why," said he, "I fed taffy in a bake-tin; also fed maple sugar, nigh on to forty years ago, but weed honey is very deceptive. You can not see much difference between that and clover honey, and can not tell the effect it will have upon the bees; but the taffy was sure cure every time."

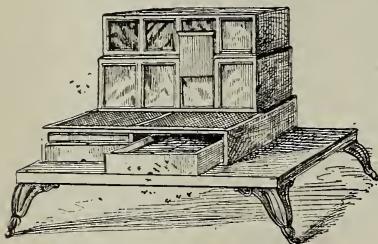
"Bee-keepers are now talking a great deal about automatic hiving arrangements. Did you ever have experience in that line?"

"Why, bless you, yes. I had the cutest hive for that purpose you can imagine, nigh on to forty years ago. This hive was invented and patented by Sylvester Davis, of Claremont, N. H. It was called the Platform hive, but I called it the Side Issue. You see, we had hot times them days in politics, and every thing was a crisis, or an issue, so I put the hive in line with the times. Here is an old picture of the hive. You observe that four hives were placed side by side. In the spring, if four swarms were wintered, remove every other one and place

on a new platform, and place empty hives next to all full ones. Close the entrance to the hive containing the swarm, and open the passages into the empty hive. If this is done in early spring, the bees will work through the empty hive; and, finding so much room, they will forget to swarm."

"But, how about a queen in the new hive? In my experience a queen is necessary, to hold the bees to business and make a permanent working colony."

"Yes, yes; but you mean a king-bee. Young men try to get smart nowadays, and fool us old heads with their new-fangled ideas; but do you think I managed bees for nothing nigh on to forty years ago? I guess I know. The process was just as simple when the hive was full, as you could see by the glass in the rear of the hive. Open the front entrance to the old hive, and close the passages between, and the thing was done. The kings



NON-SWARMER BEE-HIVE.

that were always around would set up rule. But this hive was a terror to moth-worms. I used to kill dozens every morning in the little moth-drawers. I had to tend right to my knitting and drop no stitches, to keep them from hatching, when I kept bees nigh on to forty years ago. Then, you see, under the wire-cloth platform was a spring exerciser and feeding-chamber. When it is too cold for bees to fly in the early spring, let the sun shine in here, and what a jolly time the bees could have!"

The inventor also advocated spring feeding, and also gave the following recipe for feeding to make the best of box honey:

Take 25 lbs. best West-India honey; 25 lbs. white sugar; 40 lbs. water; one gill of salt; $\frac{1}{2}$ oz. essence of anise; $1\frac{1}{2}$ pints mucilage of slippery elm; $\frac{1}{2}$ gill of porter (or ale); flavor to suit the fancy.

But I could never see much profit in the plan, and never tried it; and so my aged friend who kept bees "nigh on to forty years ago" had experimented very near to the late methods of taffy feeding and the self-hiving of swarms. There is one thing, however, we think that is for ever buried, and that is moth-traps. Our aged friend found the worms always plentiful, and the trap was a splendid breeder if only neglected, which it was sure to be by nine out of ten of farmer bee-keepers.

We found bee culture not much indulged in, in the immediate vicinity of Mr. Moore. We suppose the weed honey and moth-traps had given it a setback from which it could not recover. As we left our aged friend, the thought that "there is nothing new under the sun" was uppermost in the mind of the

RAMBLER.

Friend R., we are very glad indeed that you stuck to your principles; but I never before heard of using pumpkin pie as a "beverage." Come to think of it, however,

Josh Billings calls it "the delitful bevverij of Nu Ingglan." It is a safe thing to take, however, and I believe that all are agreed in regard to the matter. I well remember Sylvester Davis' patent bee-hive and the Side Issues. The drawers were to pull out and catch the moth, and were a big thing when first introduced. It had its day, however, and passed away, as has been the fate with patent hives for fifty years or more.

MANUM ANSWERS CORRESPONDENS.

PRACTICAL QUESTIONS ANSWERED.

Friend Root—In consequence of my talks in GLEANINGS I have received many letters of inquiry on various matters pertaining to the bee-business; and thinking that my answers to some of them may be of interest to some of our bee-keeping friends, I venture to forward you the following:

The first is my answer to a young man living in a neighboring State, who wants a situation as an assistant in the apiary, and who wishes to know how I manage with my men, and how much I pay, etc. My answer was substantially as follows:

Mr. A.—I reply to your favor by saying that I require six men to assist me with my bees during June and July—one apiary being let on shares. I usually hire one or two men for four or five months, and the other four for only two months. The price which I pay varies according to the experience and *worth* of the man. I have one man who has worked for me seven seasons of six months each. I pay him \$25 per month for May, September, and October, and \$30 per month for June, July, and August. The time is divided in this way, so that if, from any cause, he does not complete his full time, there would be no question as to the price to be paid for what time he works. I have another man who has worked for me a number of seasons, and who prefers to work only through June and July. I pay him \$75 for the two months.

I have another man who has worked for me one season; and as he is an excellent and faithful man, I pay him for this season \$25 per month for three months. For a new hand, or one who has never worked for me, or for any one near me who practices my methods, but who has had a little experience with bees, and who understands the theory pretty well, I pay \$40 for two months, or \$70 for six months, when they insist on working through the season for the sake of learning the business. Of course, their board is included at above prices. I locate one man at each out-apiary where he is to remain during the swarming season, which is usually from five to seven, and sometimes nine weeks, but more often six weeks. I expect my men to be at their post every day during this time, Sundays and all; and while I do not expect a man to do any unnecessary work on Sunday, I insist on his being on hand to hive swarms that may issue. It is my practice to visit each apiary once or twice each week, to give instructions, and to assist the men when assistance is required. You say that you have had a little experience at home with a few swarms, and that you have read several bee-books, such as Cook's Manual and the A B C, and that you have taken GLEANINGS two years, and that you would like to work the first

four months of the season, and that you are a young man of good habits, and anxious to learn the business. You ask if I expect my men to do other work not pertaining to the bee-business. Yes, I do those who work before and after the swarming-season. I have a small farm—40 acres—and when not busy with the bees I sometimes ask my men to assist in planting, and in the fall in harvesting; but my farm being small, and there being so many of us, the farm work is light, and quickly done. Now, in view of these considerations, and what you say about yourself, I will pay you \$60 for May, June, July, and August.

HIVING TWO OR MORE SWARMS TOGETHER.

Mr. Manum.—When you hive two or more swarms in one hive, how do you unite them without their quarreling? and what do you do with the extra queens? My answer is, that, in a large apiary, there will usually be several swarms out in one day—we sometimes have 20. In that case two or more may be hived together without fear of their quarreling; but if they issue one per day, or one has been hived two or three days, and it is desired to unite another with them, I first cage the queen already in the hive, and hang the cage in the hive, and then shake the bees off the combs in front of the hive, and at once dump the new swarm with them, having first secured their queen, and at once sprinkle them, hive and all, with sweetened water well flavored with peppermint, and allow them to run into the hive. Just at night I liberate the queen. Now, if the extra queen is an old or inferior one, I pinch off her head; but if she is only one year old, and a good one, I either introduce her in place of some old or poor queen, or return her to the hive from which she issued, after first removing all queen-cells. Having lost so many bees by swarming, she will not be likely to attempt to swarm again the same season. At this time I usually discard all my two-year-old queens, and for the past two years I have had calls for all such at 50 cents each. By this practice I winter no queen over one year old. If you wish much increase you can hive the extra queen with just enough bees to cover one card of hatching brood; and by giving them a card of brood occasionally, you will soon have a colony in good condition for winter, without having much reduced the working force in those hives run for surplus.

WILL IT PAY TO CONTRACT?

Another makes the following inquiry:

Having read much of your writing in *GLEANINGS*, with interest, I venture to ask whether you think it pays to contract the brood-chamber during the honey-flow, to secure all the honey in the surplus receptacles.

My answer to this question is this: In a locality where no fall (or dark) honey is stored in sufficient quantities to winter the bees, it will not pay, at the present low price of honey and high price of sugar. When honey sold at 20 to 25 cents per lb., I practiced contracting with profit. But I prefer now to allow them the full number of combs, so that the bees may store enough, or nearly enough, honey for winter, while the white-honey flow lasts, as we very seldom get any honey here after the basswood season. But if in your locality you are quite sure of securing fall honey enough for winter stores I would advise contracting during the white-honey flow. You should be governed in this by your

locality, both as regards quantity and quality of honey, as well as by the price your honey sells for.

PACKING FOR CHAFF HIVES.

Another man asks:

What is, in your opinion, the best material for packing the so-called chaff hives? I have made a few Bristol hives from your description of them in *GLEANINGS*, and the only material for packing I can get near by is unseasoned basswood sawdust. Do you think this would soon dry after packing, so it would answer the purpose?

Answer:

No: I would hardly dare use it, for basswood will mildew very quickly in hot weather; and, again, sawdust alone will pack too hard to answer a good purpose; because the harder any such material is packed, the more it becomes a conductor for both heat and cold. I believe fine dry planer shavings, such as are made by planing well-seasoned lumber, are as good as any thing which can be got cheaply. Now, if the bottom of the hive around the outside walls is air-tight, these shavings will form a multitude of little dead-air spaces; while if, on the other hand, the bottom of the hive is not tight, so but that it will admit of air, these same shavings will form a multitude of little air-channels up through which fresh air will continually circulate, which would doubtless be a benefit to the bees in hot weather, if not in cold. So, then, my preference is dry planer shavings. Oat chaff, or very fine cut straw, are good.

A CALL FROM A NEIGHBOR.

"Halloo, Charles! walk in. I am glad to see you this lonely rainy day."

"Well, I have called to have a little chat with you about the bees. Jennie said you were in your office, so I walked right in. I hope I am not interfering with your writing."

"Oh, no! not at all. I was just having a little mechanical chat with our friend Root. Well, have you been out to your apiary recently?"

"Yes: I was there yesterday, and I found things a little mixed. You remember I told you in April that I had lost only 4 per cent in wintering. Well, that was true; but since then every one of my light colonies has gone up; and some that were not so very light are missing. The boy I have there says that a number of them have swarmed out, and left some brood and lots of honey, and I have called to ask you to tell me the cause of such conduct."

"Well, Charles, you know we have had a very cold backward spring, which has been a trying time for the bees, especially light colonies. They all being so short of pollen, they have worked hard to get a little whenever they could fly out, and many times they ventured out when they ought not to; consequently the old bees have wasted away to an alarming extent. In fact, there are scarcely any old bees left in any of my hives; therefore those that came through light did not have the strength to rally and survive the wasting-away of their small numbers, and had to succumb to their fate—dwindling."

"But, what was the cause of fairly good colonies in the spring swarming out and leaving their brood and plenty of honey?"

"Well, now, let me ask you a question. Did those that have swarmed out have young or old queens?"

"Nearly all of them had old queens. Two of them had young queens hatched last August, but

they were not very good layers last fall, so I do not care much for them."

"Well, then, one cause of absconding is due to the queens, and can be traced out thus: The queens being on the decline—or poor—and the colonies being light in bees in the spring, the queens did not get to laying early enough to get a batch of young bees hatched out before the crisis came: and finding that they were weakening instead of gaining, and not being able to cover and care for their brood, they became discouraged, and swarmed out; when if they could have held out a few days longer until the brood commenced to hatch, they would not have swarmed out, because a few young baby-bees would have held them. I have given such colonies a few young bees from other hives, with good success, when discovered in this condition. If the weather had been favorable, all of these light stocks would have pulled through all right; but we have had about the hardest spring I ever knew, and we shall have no light colonies this summer to bother with, as they are all gone where the woodbine twineth."

"Have you engaged all your help yet for this season?"

"No: I am two men short."

"What are you going to do in that case?"

"Well, I have got to run three apiaries myself—two out-apiaries, besides this one at home: so when you are enjoying yourself in your one apiary you can think of me with three to manage, besides the other boys to look after."

"But, how are you going to do so much yourself, pray tell?"

"Well, I am going to try to prevent swarming in the two out-apiaries, and the home apiary I shall run principally for extracting; and I hope, by giving them room enough, they will swarm but very little if at all; and one of the out-apiaries I shall manage by removing the queens just before they prepare to swarm, according to Elwood's method, and in the other out-apiary I shall try to prevent swarming, according to Manum's method, which I do not care to tell you about yet, as I am not sure it will prove practical on a large scale. I have tried it with only a few colonies."

"Well, I hope you will be successful; but I think you will have your hands full before the season is over."

"Thanks. I assure you I shall work faithfully for success, and succeed I must, in some way."

Bristol, Vt., May, 1890.

A. E. MANUM.

THE TEXAS AGRICULTURAL ANT.

PROF. COOK TELLS US SOME WONDERFUL THINGS ABOUT ANTS AS WELL AS BEES.

I HAVE received from Mr. W. D. Allen, of Koos, Texas, a fertile (or wingless) queen of these strange ants (*Pogonomyrmex barbatus*). He requests a report through GLEANINGS, and desires especially to know whether there is more than one queen in a colony, and whether there is any way to exterminate these rivals in agriculture. As they allow no vegetation within a radius of six or eight feet of the door to their nests, the damage they do is by no means insignificant. I am specially glad to receive this queen ant, as we have none of this species in our collection. I shall be very grateful if Mr. Allen can send me more queens—both winged

and wingless—males, and workers—both large and small.

I am also glad to present to the readers of GLEANINGS something of the life and habits of these interesting insects, especially as they are of peculiar interest to bee-keepers, as there is much in common in the life economy of ants and bees; and the student of either will the better understand his subject if he study the other. These ants (see cut) are reddish brown in color. The queens are a

little more than half an inch long. The males—drones—are half an inch long, and the workers, of which there are two sizes, are respectively one and two-eighths of an inch shorter than the males. The young queens—virgins—and males have wings, while the workers and laying queens are wingless. Like bumble-bees they live in underground

nests; though these ants tunnel into the earth for several feet, and have quite extensive galleries. They may have a hill or mound above their tunnels, or they may have no hill. The entrance to the tunnels is usually by one opening; but there may be two, three, or four, all near together. They take their name, "agricultural ant," from the fact that they keep a circle, with a diameter of from six to sixteen feet, about the entrance to their nest, entirely free from all kinds of plants; and radiating paths, also cleaned of vegetation, stretch for many feet in every direction from the central circle. These paths are five or six inches wide at their inner end, and become more narrow as they extend. They are also husbandmen, in that they garner into their nests seeds during summer, on which they feed at all seasons. Their paths are highways over which they bear the heavy seeds. To show how brainy they are, it is reported that if, from heavy rains, their granaries are flooded, the seeds are carried out to dry; and, when dry, are carried back. To show their patriotism, it is reported that, in case of storms, they will plug the entrance with their bodies, and thus die for their kindred and home. There is a certain kind of grass—"ant rice," which is nearly always found about the cleared circles of these insect agriculturists. It is believed that the ants sow the seeds purposely to raise their favorite forage crop; while some argue that the presence of the ant rice is accidental, coming from seed carelessly left by the ants. There is some reason to believe that there is purpose in the seed-sowing. So we see these Texan ants are veritable agriculturists, and no mean rivals of man. The young queens—virgins—have wings. When the season for mating comes—in June—the males and females fly forth and mate. It is reported that they mate on the ground (?). The males die at once, and the now impregnated queen flies off, and alone commences to dig a home. So, like the queen bumble-bee, the queen-ant, at first, has to do all the labor. The queen ant, finding her wings in the way, bites them off. The hard command, "If thy hand offend thee," is obeyed by these insects. Who shall say that insects are destitute either of intellect or morals?

All the ants which are produced at first are workers, and those produced while the queen is not only chief, but the only "cook and bottle-washer," are the small workers. Thus, as with bees, a stinted



diet results in undeveloped females, or workers, and a very stinted larder produces small workers.

As the season advances — June — the males and queens again appear, and fly forth to mate, after which the queens commence new colonies.

To answer Mr. Allen's question, I think there is only one queen in the colonies of these ants, though I may be wrong, as many species of ants have several queens in a single colony.

Ants are very muscular. It has been estimated that a man, to equal an ant in performance, would have to walk over 150 miles a day with more than a ton weight on his head. Like bees, ants are very neat, and spend much time in scrubbing and combing. Unlike bees, the ants scratch and comb each other, and there is every indication that the recipient of such favors receives them with great satisfaction. The ants are also seen to sleep so soundly that they are waked with difficulty. From this we may very safely conclude that bees also take naps. As the agricultural ants are always all in their nests from noon to one o'clock, it would seem probable that this is the usual napping time.

Any who are specially interested in these ants will do well to read the very interesting book by Rev. Mr. McCook, of Philadelphia, on this insect. This is a book that should be in every public library.

Mr. Allen asks for a remedy, or means to exterminate these pests. I have no doubt but that bisulphide of carbon, poured into the tunnels between twelve and one, will quickly destroy these ants. It is used successfully to destroy the prairie-squirrels in the West, and I have used it here with entire success in killing the ants that are often so annoying on our lawns. I have just explained the use of this substance, and the other insecticides which I have found useful in killing insects, in a bulletin entitled *Insecticides*, which any one can get free by addressing a card, requesting it, to Secretary H. G. Reynolds, Agricultural College, Michigan.

Mr. McCook explains a trap which he says will very soon exterminate all the agricultural ants of any nest. This consists of a tin box set over the hole, so made that any ant passing either in or out must pass over an inclined piece of bright smooth tin, whose roof-like edge stands or projects over the box. Thus the ants are precipitated into the box; and as they can not get out, they are easily killed. I should suppose that, if the box were quite large, and contained kerosene, it would need no attention after placing it, else it would need emptying each day.

A. J. COOK.

Agricultural College, Mich., Apr. 26.

I am sure, dear friend, we are all very much interested in what you have just told us. I have heard of those ants sowing rice and tending to the crop. Now, although my faith is very great along this line, I must confess that I am strongly inclined to think, with the others you mention, that this must be a mistake. Even though the ants are seen depositing seeds, I do not believe they do it with any expectation of waiting for a crop. Some one has said that the lowest types of mankind can be distinguished from the highest types of animal instinct, by a very simple matter; namely, no animal ever yet had sense enough to build a fire to warm him when cold. In the same way, I should say that

no animal or insect ever had or ever could have sense enough to sow seeds and wait the production of a crop.—Are you not putting it a little exact to say that the ants are all in their nests from noon till one o'clock? Did you not mean to say for a period of about an hour, usually, during the hottest part of the day? Without clocks and watches they would have to go out and take a look at the sun to see when it was about napping time. I do know that domestic animals get into the habit of judging time very accurately. Our Clydesdale team has learned to make a fuss if they can not get into the stable and be fed when the whistle blows. A few days ago our teamster told them to go on; that they could not stop that particular night, even if the whistle did blow, and one of them gave a loud whinny of disapproval.

THE HEAVY LOSSES OF BEES IN YORK STATE.

ITALIANS WINTERED BEST; BLACKS AND CARNIOLANS ALL DIED; HONEY-DEW THE CAUSE.

I SEE the report of James Markle, in last issue, from New Salem, N. Y., that he lost most of his bees. I live about 12 miles from him. The loss of bees through this part of the State is fearful. It has cleaned out whole apiaries, and covers a large territory. The whole cause is bad stores, or, in other words, the large amount of honey-dew that the bees gathered last September. I put into the cellar about 125 colonies. All perished except 60 colonies of Italians, the rest being blacks. The Italians had their hives stored with plenty of good early white honey, and had no occasion for storing honey-dew, as their hives were full of good honey. When the honey-dew came, every colony of pure blacks perished. Does this not prove the superiority of the Italians over the blacks? Last season the blacks did nothing, and hardly pulled through the summer, while the Italians in the same yard gathered enough to live on, and stored their hives full, and gave some surplus. The blacks have no honey stored; and when the honey-dew made its appearance they had room for all they could gather, and in a few days their hives were full. As it became salvy as soon as gathered, it was impossible to extract. I see you doubt, in your foot-notes to Mr. Markle's report, that the food was the whole source of the loss. It certainly was, and nothing else. If it was not, why did those having honey-dew all perish, and those having good pure stores all live, being all wintered in the same cellar. If the bees had all been left out of doors, the loss would not have been 5 per cent, as those that were left out had a cleansing flight every few days all winter.

I am done now with black bees. They are certainly not worth bothering with in this section of the country. I have kept about an equal number of blacks and Italians for the last 15 years, but now I will not bother with the blacks any longer. All they are good for is to work on buckwheat when we have a good August, and honey-dew when it comes. Although my loss has been heavy for me, never losing any in winter before, I am not discouraged. I have 60 good strong colonies of Italians left. I shall try all the harder to get back to

my number again; but it is hard for a poor man to lose so many.

CARNIOLANS BAD FOR WINTERING.

I had a few colonies of pure Carniolans. They were the first to perish. I have tried them now four years. They are no better than the common black bees, but worse to swarm.

Gallupville, N. Y., May 20. F. BOOMHOWER.

AN A B C SCHOLAR'S EXPERIENCE IN CALIFORNIA.

STARTING WITH A FEW FOUL-BROODY COLONIES, AND INCREASING TO 80 HEALTHY ONES.

THE rainfall in Southern California has been very large, being over 40 inches, while in ordinary years about 20 is a fair average. Such rainfalls have preceded good honey years in the past, and a good flow of honey was predicted by the bee-men for this season. This prophecy seems likely at present to be fulfilled. Swarming has been going on at a lively rate, and honey is now coming in freely. We have this year's swarms from which we have already extracted and taken comb honey. Some of them are also ready to swarm again.

This is all very encouraging to us. We know nothing at all of bee culture except what we had read in the A B C book and a few copies of GLEANINGS. We took an apiary here that had dwindled from 150 down to 18 hives, containing bees. Foul brood had been among them, and we knew what we had to contend with. Of the 18, about 6 or 7 were unaffected, and the others have at this date mostly gone with the majority.

We also purchased another apiary of 22 hives, also affected. The price paid was so little that I am ashamed to mention it without your knowing all the circumstances. I noticed they were about as willing to give us *all* the apiary as a part of them for the sum we offered. We had very little money, and were obliged to think before investing. We commenced by buying empty hives at a low price, taking out comb and boiling them in an iron tub. The wax, we traded to a supply-dealer near by, for foundation. We then removed all diseased brood and gave foundation in place, removing the bees at the same time to a cleaned hive. We now have a rousing apiary of about 80 hives. I never knew that bees could work as ours do now from daylight to dark. About 10 or 12 swarms we took from trees and buildings, or picked up in other localities during the swarming season. The others are the increase of our apiary. We have rented a furnished cottage, and it would seem that we shall be able to live comfortably. I might say, that California was as new to me as the bee-business. It was a strange land, strange people, and a strange business at the same time. Such sights as raising an empty hive and finding a lizard a foot long inside would be new to many of your bee-family. Every step of the way was new and novel. We often read the A B C book until late at night, that we might know how to act the next day. My helper is a young man of more than ordinary practical talent and discernment of things. Though scarcely able to speak or read English, much of the credit of success is due him. I read the book and gave him the outlines, and was often astonished at the almost marvelous comprehension, and even enlargement of the subject, which he showed.

To the bountiful year, given by the kind heavenly Father, of course, is due such an incease. Henry keeps a Bible in the bee-house, and at times reads to me while I pronounce and explain the hard words. He thinks it better than gold, and digs deeper and deeper into its mines of truth day by day, so that, besides becoming bee-keepers, we are fitting for the pure and beautiful country beyond. Oh that we might get right, before the summons comes to pass over!

To speak of bees again, I will tell you what I did. I transferred a hive, cutting out several combs, and fastening in other frames, without veil or smoker, and without getting stung. I do not know whether it is a feat or not. It was a good swarm I found in an odd-sized hive piled up with others some distance from our apiary. I did not want to go back again, and to save time I put it in a regular-sized hive, as above stated. I raised the cover very gently, and got them exposed to the sun and air, and then I think they did not know their own hive, and so did not defend it. At any rate I cut out the combs and fastened them into the other frames with sticks; and though the air was full, not one ventured to sting.

It is necessary to shade all hives here. We buy store-boxes for shades, and also use burlap some, under the cover, and hanging down in front to shade. We have just finished painting the hives white, the better to stand the heat. I have seen combs at the front of the hive (a black one) that were melted into a mass.

We get 12½ cts. at the village store, for comb honey, in 1-lb. sections. It is retailed at 15. For extracted we get 6 cts. by the 60-lb. can, and 7 for small quantities. We have just prepared 32 60-lb. cans for honey, and hope that will not nearly hold it. We have extracted at this date about 8 cans, and the white sage is just beginning to furnish honey. "Black sage" has been the best honey-plant up to this date. Swarming commenced March 28, and was wonderfully lively for a time, but now seems mostly over.

W. S. RITCHIE.

Sierra Madre, Cal., May 19.

BRACE-COMBS, ETC.

FRIEND DOOLITTLE ARGUES THAT WE DO NOT WANT THEM REMOVED.

It has been with much interest that I have read all the arguments, experience, etc., along the line of wide and thick top-bars for the frames to do away with brace-combs, all, or nearly all, seeming to think that it would be a great advantage to "be rid of such a nuisance," or, at least, they seem to think of these brace-combs only as a nuisance. Now, with me I consider these brace-combs a great help, and for years I have allowed them to remain on the top-bars of my frames, because I considered them of value; that is, I consider them of more value than they are a disadvantage. Were I working an apiary for extracted honey I might change my mind a little, perhaps; but for comb honey I would not allow any one to scrape them off my frames for 50 cents per hive. Years ago I considered them a nuisance, and so each year I scraped them off in the fall when I prepared my bees for winter, till one fall, through an extra amount of other work, I did not get time to go over more than about two-thirds of the apiary in preparing for

winter, guessing at the rest, or, what amounted to the same thing, weighing the hives to come at the amount of stores they had, instead of inspecting every frame, as I usually do. Previous to this I had used the Hill device, or something similar, to give the bees a passageway over the combs during winter, as is so often recommended to be used under the bee-quilt; but frequent examinations during winter satisfied me that these brace-combs, which I had taken so much pains to remove, answered every purpose of the device, besides being much cheaper, as well as requiring no room in my shop, or lugger back and forth from shop to apiary both spring and fall, which they required when used. But their greatest advantage appeared when I came to put on the sections, for the bees seemed to consider them as little ladders on which to climb up into the sections, for it was a very noticeable fact that the bees entered the sections much sooner where these brace combs were left than they did those where they had been removed, and, if I remember correctly, I so wrote in GLEANINGS at the time, advising all to remove the brace-combs from the bottom of the supers, but not from the tops of the frames. The next year I tried the same experiment again, and so on for several years, till at last I became thoroughly convinced that these brace-combs added largely to my crop of comb honey by getting the bees into the sections much sooner than they otherwise would.

Now, some may say that it is no use getting the bees into the sections as soon as the first honey comes in; but I claim that this has very much to do with our crop of comb honey. It is not that the first four or five pounds of honey stored in the sections could be sold for so much cash that I wish it placed in the sections, but all my past experience teaches me that, for every pound of honey stored in the brood-nest at the commencement of the season, there will be ten pounds less stored in the sections that year. Let the bees once commence to store honey in the brood-chamber thus early in the season, and they are loth to enter the sections at all; and, instead of giving us lots of section honey, they keep crowding the queen from the cells more and more till, when fall comes, we have little honey for market, and our bees in poor shape for winter. When we come to fully understand this fact we shall see that, wherein these brace-combs are the means of having our bees enter the sections sooner, just in that proportion are they of value to us. Try the experiment, brethren, and see if, at the end of such a trial, you will not be willing to put up with the inconvenience they cause you, for the sake of their great value.

CAPPING COMBS.

Picking up a paper lately, I read an article arguing in favor of extracting honey before it is ripened, in which were these words: "It stands to reason, that, if a colony is saved the time of capping over hundreds of square inches of comb, it will gather just that much more honey." This I claim is a mistake wrought out by the writer in not being familiar with the laws that govern the inside of the hive. If the bees which capped the cells were the field bees, and if these cells were capped in the day time, then it would stand to reason, as our writer claims; but when we come to know that (when a colony is in a normal condition) it is the bees that are under 16 days old which do all of the wax work, and that the larger part of this wax-working is done at

night, then we see that the capping of the combs plays no important part in the production of honey. The bees which cap the honey would not go into the field if there were no honey to cap, so I do not see where there would be any saving in keeping them idle by extracting the honey before they had time to cap it. If it is to be argued that it would save the honey that went into wax to form the cappings of the combs, then I answer, that, according to Prof. Cook and my own observation, bees always secrete wax enough for the purpose of capping combs, during a honey-flow, whether combs are capped or not; hence it is wasted if they have no place to put it. Looking at it in the above light, which is the correct one, in my opinion, there is no saving to the bees in extracting unripe honey. More bulk of honey will be obtained, I admit, but not because time is saved to the bees.

Borodino, N. Y., June 6. G. M. DOOLITTLE.

Friend D., I remember quite distinctly that, when you paid us that visit ten or twelve years ago, one of the things you were very emphatic about was that you did not want the burr-combs removed from the top of the frames; and during all this discussion in regard to brace-combs the matter has been on my mind, and I have been feeling quite anxious about it; but I had not got started until you took it up. Now, I think very likely you are right. But you use an arrangement amounting virtually to the wide frame for holding sections, put over the tops of the frames. Now, if I understand you, you let these burr-combs go right up and be built right on to the top-bars of the wide frames. In that case you have a sticky, dauby mess every time you remove the wide frames to take out the sections. Then you have the inconvenience we all know about so well, when putting them back again. May be you have some way to obviate this latter matter, however—I hope you have. I once decided that I would let the crate or super be built fast to the tops of the frames, and let them remain there during the honey season, taking out the sections when I want to, by removing them one at a time from the crate or super, to get rid of this inconvenience of breaking loose from the burr-combs. I emphatically agree with you in regard to getting the bees at work in the sections before very much honey is put into the brood-combs, although I should not say that one pound in the brood-nest very often prevents ten pounds from going into the sections. I am inclined to think there is quite a saving in the quantity of honey by extracting before the combs are capped, although I quite agree with you in your statement that the bees that gather the honey do not, as a rule at least, cap the cells over. Ernest calls my attention to the fact, friend D., that you use a deeper frame than the shallow Langstroth, and there is a pretty general agreement that bees will go into boxes quicker from shallow Langstroth combs than from the square Gallup combs. He says, too, that many who are using thick top-bars declare they do not hinder the bees from going up into the boxes, even though no burr-combs are built over these top-bars. I should be very glad indeed to have our good friend J. B. Hall, of Woodstock, On-

tario, the pioneer of thick top-bars, tell us what he thinks about it. He is an adept in getting large amounts of comb honey, as all know who talked with him at the exhibit at Toronto.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper, and marked, "For Our Question-Box."

QUESTION 162.—a. What do you pay for competent help in the apiary? b. Do you employ boys or men? c. Which is the cheaper help—the average boy from 12 to 16, or a full-grown man, the boy receiving wages proportionate to that of the man?

I don't hire any help.

Ohio. N. W.

A. B. MASON.

a. We do our own work.

Illinois.

MRS. L. HARRISON.

a. \$30 per month and board. b, c. A good competent man is always cheaper.

Louisiana. E. C.

P. L. VIALLON.

a. From \$15 to \$30 per month, according to reliability and experience of the hand. b. Men. c. Man.

Cuba.

O. O. POPPLETON.

Farm wages. b. Men. c. The man, provided he knows as much as the boy; i. e., enough to do as he is told.

New York. C.

P. H. ELWOOD.

\$1.50 per day. b. Employ a man. c. A handy boy will do full as well as a man, and will work cheaper. The trouble is to get the handy boy.

New York. E.

RAMBLER.

I have never paid regular wages to any except boys of the ages mentioned. I paid them 40c per day. I should prefer to pay more for older and more reliable help.

Illinois. N. C.

J. A. GREEN.

We employ either boys or full-grown men, and pay without regard to the age, according to the good will and ability. A man may be too dear at 50 cents a day, while another can be cheap at three dollars.

Illinois. N. W.

DADANT & SON.

I do not hire. The man who thinks he knows much about bees, and really knows nothing as he ought, is rather unpromising timber to make help of, compared with a good boy who is willing and anxious to learn.

Ohio. N. W.

E. E. HASTY.

a. Don't employ any. c. A boy 16 years old will do as much work as he ever will during 10 hours each day, and should be paid as good a price as a man, providing he does his work as well. There is a difference in boys as well as men. A poor one of either does more damage than good in any apiary.

New York. C.

G. M. DOOLITTLE.

a. About \$35.00 per month for men; 15 to 20 for boys. b. Both. c. A good boy is as good for some kinds of work as a good man. It depends on the kind of work you have to do; some parts of the sea-

son, boy's work is the cheaper. As a rule I should prefer experienced help—men instead of boys.

Ohio. N. W.

H. R. BOARDMAN.

a. Usually \$25 for an inexperienced man to work with me, and \$35 to \$50 for experienced help; amount depending on skill of man, amount of honey coming, and whether he has to take charge of an apiary himself. Also somewhat by the supply and demand of help in the market. b. It seems impractical to work boys in to advantage, except where several hands are needed in an apiary.

California. S. W.

R. WILKIN.

a. \$30 per month with board is the highest that I have paid for the season. I have hired more for the past 15 years at \$1.00 a day and board, than at any other price. This was to a man that has been with us 18 years, and has proved to be the cheapest help that I have hired. b. Both. c. I have had some boys that were excellent helpers; but find quite a relief in having some one with age and experience sufficient to shoulder a part of the care and responsibility.

Wisconsin. S. W.

S. I. FREEBORN.

a. My help has always been in the family. b. Mostly women. c. I think I'd rather have an average man than an average boy, but would rather have an unusually bright and thoroughly trustworthy boy of 16 than an average man, and would prefer a very competent man to either. My principal help is a slender girl that I wouldn't swap for either of the above, although she is such a driver that I sometimes threaten to "strike" for less hours or leave for an easier place.

Illinois. N.

C. C. MILLER.

a. From \$25 to \$30 per month, according to the length of time they work. b. Good men, when I can get them. c. The full-grown man every time, if competent, and I want no other, though I am sometimes obliged to hire young men; and I must say that I have had young men 16 to 20 years old that did well. I always prefer to keep my old help year after year when I can; but it often happens that one or more wish to start business for themselves, so I then have to look for new hands. This happens nearly every year. See page 455.

Vermont. N. W.

A. E. MANUM.

We hire boys from 16 to 20 years; paying about \$10 a month and board, for the first year, for a 16-year-old boy. Some boys are good help at 12 to 14 years, at about \$8.00 per month. We rather have boys than men; they are quicker, and will do more work than the average inexperienced man. We keep our boys as long as we can. They are worth more and more every year. But as our work in the apiary lasts only about a month each year, our boys usually leave us after two to four years, for some other more steady work.

Wisconsin. S. W.

E. FRANCE.

You are aware that I have students who come here to learn the business each year. From the best of these students whom I can get to work for me, I select my foreman, and this one man is all I have to hire. This foreman is usually from 20 to 30 years of age, and all but one unmarried, so far. My son who has acted in that capacity the past year is only 19 years old, but is unexcelled as foreman of my apiary; 12 to 16 is too young to manage an api-

ary, either with or without help. The man would be the cheapest in the end. I pay from \$300 to \$400 a year and board. I have work in the winter; but I value their services at just half in the winter what I do in summer. Another thing I wish to mention here. I have had twenty applications for men who have learned apiculture with me, for every one I can furnish. The demand for practical apiculturists who are really worth something, is away ahead of the supply, and that, too, at wages about double what farm hands can get.

Michigan. S. W.

JAMES HEDDON.

Dear friends, I am very glad indeed to get the above answers, and I am glad, too, to know that in the main they pretty nearly agree with my own experience in hiring help. My great business in life has been in employing help; and not only have I done it for personal gain, but I hope and believe that the inspiring motive has been to solve this great problem of "something to do." Now, then, I think you pretty nearly all agree that it is *not* a discussion between men and boys; neither is it a discussion between men and women; but the whole matter hinges on this: The faithful and the unfaithful, or, if you choose, the half-hearted and the whole-hearted. I have sometimes decided that I could not wear myself out any more in running after boys; but in a very little time I would decide again that one good faithful, whole-hearted boy, was worth more than half a dozen men who were intent only on passing the hours and getting their pay. The one who enters heart and soul into his work, and strives to make it a success, is the one that is helping. We are just beginning to pick strawberries. As we are getting 18 cents a quart for them, it pays to go over a large extent of ground for only a few berries. As fruit is very scarce in our market, everybody is hungry for it. My first mental question was, "Where is the boy who will get these few berries—who will get them *all*, and not waste his time, nor eat the greater part of them?" I instantly fixed my mind on *one* boy whom I knew would be faithful in every respect. He would not need any watching, and there would not be any doubt in regard to the result of his search. He could not get them all before schooltime, so help was needed. After running over in my mind at least half a dozen, I decided on one of the very smallest. He has all the qualifications of the other one, and I am sure, without saying any thing to him about it, he will not eat a berry without permission, during his two hours' work. A few days ago when I was discussing with the foreman about trusty boys, this boy overheard our remarks, and looked up with a bright, manly face. Said he: "Mr. Root, am I a good boy?"

"Yes, H.," said I at once, "you *are* a good boy;" and I mentally added, "May the Lord bless your faithful, honest little soul." And my prayer is now, "May God help us to so educate our children that there shall be *more* faithful, honest ones." It needs no spirit of prophecy to say that such ones will rise. Why, no matter how many crowds are going here and there for work, there will *never* be enough of the real honest

and true—the real genuine nobility of the earth, and the *salt* of the earth. May God help us!

HEADS OF GRAIN FROM DIFFERENT FIELDS.

HONEY STATISTICS.

The following are the rest of the statistical reports, which came too late for insertion in our last issue. Some of the correspondents were away—or, at least, in the far corners of the United States, so that their reports came in a little late.

ARKANSAS.

W. H. Laws, Lavaca. W. C. 6-2.
a. b. 2; outdoor.

CALIFORNIA.

G. W. Cover, Downieville. N. 5-31.
a. 80; outdoors; b. 80; in box and Langstroth hives outdoors.
W. W. Bliss, Duarate. S. E. 5-23.
a. 5; outdoors; b. 15; outdoors. The season so far is far above the average.

Wm. Muth-Rasmussen, Independence. E. 5-20.
a. 2; outdoors; b. don't know; probably the same.

J. P. Israel, Olivenhain, Cal. S. 5-20.
a. 7½; outdoors; b. 10; outdoors. No cellars for bees are used here.

R. Wilkin, San Buenaventura. S. W. 5-25.
a. 6; outdoors; b. 5; outdoors.

GEORGIA.

J. P. H. Brown, Augusta. E. C. 5-23.
a. 10; outdoors; b. 20; outdoors. Bees mostly kept in the old box gum.

INDIANA.

T. H. Kloer, Terre Haute. 5-27.
a. 5; nearly all on account of queenlessness. Wintered outdoors. b. There was little loss during winter, but during the present month many have died of starvation, dwindled away, or swarmed out. Bees are just beginning to make a living.

KANSAS.

Frank H. Howard, Garden City. 5-23.
a. 10; outdoors.

MICHIGAN.

W. J. Carroll, Otsego. S. W. 5-26.
a. 90 in cellar, loss 1; 10 outdoors in chaff, no loss. b. The loss in this neighborhood is very light, not more than 10 per cent. Bees wintered in chaff are in much the best condition.

MINNESOTA.

A. F. Bright, Mazepa. E. 5-24.
a. 25; cellar; b. 20, cellar. The loss in cellar was comparatively light, greatest loss being after their removal from the cellar, on account of the cold backward spring.

MASSACHUSETTS.

A. A. Sanborn, Westfield, Mass. S. W. 5-22.
a. Loss very light outdoor. b. Loss very light; both methods.

OREGON.

George Ebell, Baker City. E. 5-23.
a. 100 per cent. b. Outdoors in chaff.

TEXAS.

B. F. Carroll, Blooming Grove. 6-2.
a. None; outdoors in S. hives. b. None; outdoors.

VIRGINIA.

J. W. Porter, Charlottesville. C. 5-24.
All outdoor wintering in Virginia. My own bees mostly slaughtered by foul brood. Bees generally wintered well; small loss.

WASHINGTON.

J. H. Goe, Mossy Rock. 5-24.
b. 25 outdoors in common hives. The winter here was very hard on bees.

W. W. Maltby, Port Angeles. 5-23.

a. b. 7, outdoors.

WISCONSIN.

J. C. Sayles, Hartford. S. E. 5-20.
a. 2, cellar; b. 2, cellar and outdoors.

HEAVY LOSS IN A LARGE APIARY, BY THE MISSISSIPPI FLOOD.

I have just had a severe loss among my bees. I live in the Red River Valley. I had 435 colonies on the first of April, and their increase from that time in three apiaries. On the 30th of April several levees broke in my neighborhood, and the water ran over my place. I put them up on pens four feet high. The water rose so fast, and the current was so strong, that I could not do any thing for

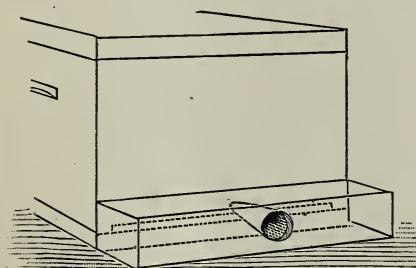
them after it got that high. The pens were washed away, or knocked over by drift. I have only about 40 left, and they are damaged, and the brood got wet. I have changed them into new hives. The water was 33 inches deep in my house. Some houses were washed away, and nearly all fences are gone, and crops destroyed. A great deal of stock was drowned, but no loss of human life that I have heard of. Some of the hives have been found in the woods, with a few bees in. The dead brood smells bad. Will it cause foul brood?

Rush Point, La., May 24, 1890. W. J. DAWSON.

No, sir. Foul brood can not start without a seed, any more than corn can grow where none is planted.

IMPRISONING TROUBLESOME ROBBER BEES, AND PUTTING THEM TO HONEST WORK.

I applied the wire cone to a use the other day that I am very much pleased with. Robbers got to work at a nucleus, and were raising quite an excitement. I made a box 3 x 3 inches, and as long as the width of the hive, with no bottom or back. The top was of double wire cloth, so they could not feed through it. Then in the front I bored a two-inch hole and put in a wire cone $2\frac{1}{4}$ inches long, pointing inside. This box I then fastened over the en-



ARRANGEMENT TO PERMIT BEES TO GO INTO HIVES, BUT NOT TO GET OUT.

trance of the hive being robbed, and you should have seen the robbers pile into that cone—just where I wanted them. Soon they were all in, out of my way in working for the rest of the day. I then took them back into the cellar for three days; and when put out they remained in that hive. So I not only helped the weak swarm, but got the robbers nicely cornered, and stopped their nosing around, and stinging, when every thing else might have failed. This plan may not be new, but I have failed to see it in print; and I give it, thinking it may do some one some good.

H. P. LANGDON.

East Constable, N. Y., Apr. 16.

Friend L., your experiment is quite old. As much as ten years ago I gave an account of it in GLEANINGS. I, too, got a lot of black robbers entirely out of my way; and by setting them in the cellar I made honest bees of them. They did not last very long, however. Either they lost their lives in undertaking to rob somewhere else, or else they were bees so old that they did not have very long to live. They lived long enough, however, to strengthen up my weak colony, so that the queen could fill it with brood. In my case, I presume that these black robbers came from the woods. If it were neighbors' bees, however, we should be careful about trespassing on any of their rights.

CARNIOLANS, AND THE POSITION OF GLEANINGS IN REGARD TO THEM.

By a late number of the *Apiculturist* and one or two of the other bee-periodicals, we note that one or two writers think the position of GLEANINGS is rather unfavorable toward the Carniolans. In fact, one scribe intimates that, because we sell Italians, therefore we condemn Carniolans. Why, the facts are, friends, we could sell Carniolans as well as Italians: At one time we were seriously proposing to locate a Carniolan apiary; but the few colonies we tested did not prove to be a desirable race to sell or recommend, and we thought we would wait for further developments. With us the Carniolans were not very gentle. The progeny of one queen were the crossest bees we ever had in the apiary; but then, she may have been crossed with a black drone; but from the looks of her bees it was impossible to tell whether she was pure or hybrid. We also found that the Carniolans were disposed to swarm rather to excess. However, as we do not wish to appear partial we are glad to give a good word for them. In the last *Bee-keepers' Review* we find the following editorial:

THE CARNIOLANS GREAT BREEDERS.

This is the first spring that we have had several good colonies of Carniolans in a normal condition—that had not been exhibited at fairs the previous autumn. That they rear more brood early in the season than do the blacks or the Italians, there is no question. It was a surprise to us to see the enthusiastic manner in which they go at it; as though brood-rearing had filled their minds to the exclusion of all else. It makes no difference if no honey is coming in, and only a little remains in the hive, brood-rearing is kept up to the very highest notch until the last drop of honey is consumed. Even with our present cold, rainy, and late spring, three colonies of Carniolans swarmed May 23; and at this writing (May 27) the Italians have made no preparations for swarming.

We all like bees that get to the front early in the season—that "show up" with hives running over at the blossoming of the clover—but, unless these bees will "turn to" and gather in the harvest when it comes, our enthusiasm will suffer a rapid decline. In this latter respect, the Italians never disappoint us. When the harvest comes they are as completely carried away in gathering honey as the Carniolans now are in raising brood. If the Carniolans will gather honey when it comes, with the same energy now displayed in breeding, they will be the bees for us; and it is with interest that we shall watch their behavior in this respect, and report results.

Perhaps we have not had fair samples of the Carniolans. We hope the majority of them are, however, better than those we tried. What we are all after is a race of bees to breed early, are prolific, good workers, and but little inclined to swarm, whether it be Italians or Carniolans. Beauty or color ought to be a secondary consideration.

FURTHER PARTICULARS IN REGARD TO THAT HEAVY LOSS IN NEW YORK.

You ask for a more definite report on my bees. I built a cellar, a honey-room, and a shop, 18x20—cellar full size of building, base laid in mortar, 6 ft. high, with drain under the base. It being so wet all winter, the ground in the cellar became very wet. I put the bees into the cellar Nov. 30; set them 10 in. above ground, three and four tiers high, with open bottom, and honey-board shov'd part of the way off. It got very warm at first; then I opened the cellar door at night: left windows open all

the time, except shutters. It was very dark when the door was shut. The combs did not mold. I set my bees out Jan. 6, and Feb. 12 I left them out two days and then it turned cold, and snowed. I took 1000 lbs. of honey, top storage. I don't think it was the cellar, but the warm winter, and honey-dew. I will give you some of the losses:

	CELLAR.	LEFT.
John L. Van Olindo,	117	3
Peter Livingston,	60	4
W. S. Ward,	300	150
I. Hallenbeck,	200	loss heavy
W. Wright,	400	" "
H. Martin,	70	" "
H. Bradt,	90	6 or 8 left.

These were all in cellars that have wintered well heretofore.

If you want definite statistics I will try to get them. There are others who have lost. It is wet, cold, and backward for bees.

L. MARKLE.

New Salem, N. Y., May 22.

TOO SMALL AN ENTRANCE FOR THE CHAFF HIVE.

I like the Dovetailed hives to hive in; but with no bee-cellars to put them in for wintering, I will take the chaff hive all the time for the permanent home of the dear little bees. I have tested it, and found but one fault; and that is, the 8x3% entrance is too small for hot weather, and I often have to raise the cover to keep the bees from clustering outside. I should like to tell you how much good Our Homes talks are doing, but I have not time. May God ever be with you.

LUCINDA A. ZINN.

Philippi, W. Va., May 3.

We formerly made the entrance to the chaff hives only 8 in. long. Others have mentioned that this was too short, and our own experience convinced us as much. We have recently made the entrances full width of the hive, and we believe the change will be appreciated.

SELLING SECTIONS BY WEIGHT.

I object strongly to your statement that section honey is sold by weight. Everywhere I have been—Boston, New York, Washington, and even our own little local traders, invariably sell them (at retail) by the piece, no matter whether 12, 14, or 16 ounces, at the same price. I have no doubt that 99 out of every hundred retailers do the same thing all over the country.

E. C. NEWELL.

Brookfield, N. H., Apr. 30.

Friend N., I do not know that I ever went into a grocery in any town or city where they sold sections as you say, without putting them on the scales. Why, the very idea of selling three-fourths of a pound at the same price as a pound, or even a pound and a quarter, seems incredible. Honey commands pretty nearly the price of butter. What would become of the grocer who would attempt to put off 12 ounces of butter for a whole pound? Perhaps we had better settle this question through the Question-Box.

LOSS IN MINNESOTA.

There was very serious loss in this county, from dysentery, caused by honey-dew. Some localities did not suffer so much as others. Colonies were left in very weak condition. While I lost but one colony in 40, I should estimate my loss in bees at 10 per cent. Others have lost 50 per cent in colonies, and 75 per cent in bees (estimated).

N. P. ASPINWALL.

Harrison, Minn., May 20, 1890.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

MARKET-GARDENING JUNE 15.

In my last I considered at considerable length what we should do with such a surplus of water as we were then having. Well, almost before my letter was in print it stopped raining and we have had warm sunshiny days almost uninterrupted until the present time. I thought that, with the amount of rain we had had, we certainly could stand a couple of weeks, or even a month, without suffering. I soon found out my mistake, however. The ground had been so thoroughly soaked that our clay soil settled down about as hard as if it had never been plowed. Then when the drouth came, the ground cracked open until the cracks through the strawberry-bed were large enough and deep enough to drop strawberries—that is, little ones—clear out of sight. When a little rain came, the water just ran into the cracks and seemed to do very little good, comparatively. Our transplanted celery and cabbage did not prosper at all, unless the beds were heavily sprinkled with water from the windmill, and then loosened up by a sharp steel rake. This saved them, but it was almost more work than the plants were worth. Under the circumstances, about the only course is level culture, and plenty of soft mellow dirt. With the soft mellow dirt we can fix the ground so it would stand a drouth of two weeks, or a month, easily. The ground that was planted *before* the terrible rains, amounted to but little; I put in the potatoes as nicely as I ever did; but there came up a great wetness, and settled the clay down so solid it was like a brick. The potatoes tried to get up through the crust, but gave it up, and a great part of our potatoes on the creek-bottom land are *under the crust* yet. Cultivating between the rows fixes the dirt between the rows well enough, but it does not help that around the potatoes, so our first planting will be a failure. Ground that had *not* been planted was plowed up, rolled, harrowed, then rolled and harrowed again and again, until we had fine mellow soil. Corn, beans, peas, etc., planted in that fine mellow soil, without even a drop of rain, came up and grew to my full satisfaction. Without this fine mellow soil and perfect tilth, it is almost impossible to get a decent crop, no matter how much manure or phosphate or any thing else you put into it. To sum up the matter, when we have such heavy rains as we have had during the past spring, I do not know what to do. Does anybody else? True, we can wait until the rains are over and until the ground is dry enough to pulverize properly; but we shall have to go without early stuff. Sandy loam, with a gravelly subsoil, would probably help the matter greatly; but I fear that underdrains and overdrains are both inadequate for such severe rainstorms. We can, however, rejoice at the excellent prices. June 10 there was scarcely a strawberry in Medina, and whoever had them to put on the market could get his own price. We still get 20 cts. per lb. for

lettuce ; 10 cts. for spinach and beet greens. There is another thing that I am rejoicing over: When every thing is exactly right, how wonderfully crops may grow and mature ! Very few, in my opinion, have witnessed the possibilities of market-gardening and fruit-growing. We get glimpses, however, occasionally, and I am getting some of them now, and that makes me happy.

OUR HOMES.

If ye, then, being evil, know how to give good gifts unto your children, how much more shall your heavenly Father give the Holy Spirit to them that ask him?—LUKE 11:13.

As it was children's day, and other matters occupied the attention of the Sunday-school, our lesson for last Sabbath was not taken up at all. But it has been taken up by me during the week, in a way that I have seldom before taken up any lesson. The golden text, "Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you," has always had something startling in it to me; and then the words afterward, about a child asking its father for bread, or for a fish, or for an egg. Would any *father* give a stone or a serpent or a scorpion? Surely not. And right close upon this vivid illustration comes the promise of our text to-day: "If ye, then, being evil, know how to give good gifts unto your children, how much more shall your heavenly Father give the Holy Spirit to them that ask him?" Please notice that, instead of saying that God will give bread, fish, etc., or needful food, the Savior says he will give us the *Holy Spirit*, implying, in a most positive and direct manner, that the Holy Spirit is the summing-up of all things. And the more I think of it, the more sure I am that the one thing needful to us all—yes, to every reader of GLEANINGS, is the *Holy Spirit*. If the *Holy Spirit* is in our hearts, it takes the place of every thing else. I have been so much impressed with this that I have been praying with unusual earnestness for that *Holy Spirit* in my heart, that is promised with so much emphasis. You will notice that, in all of Jesus' talk, in all his discourses, that seems to be the great theme. He is constantly exhorting us to more faith in God. Just before that part of the lesson which I have taken up, is a most earnest exhortation to importunity in prayer. This means, as I take it, that we are not to get *tired* of praying, nor to lose faith. We are to plead with God as we would plead with a neighbor who was unneighborly. Even though he should snub us, we are to have energy and perseverance, and faith enough to continue to beg and entreat and implore, even though he should say, right out, that he would not accede to our request. Now, we are to hold on to *God's promises* in the same way. We are to beg and beseech, no matter if we are discouraged by seeing only continual badness in our own hearts; and we are to continue to implore and plead for his *Holy Spirit* to take the place of the badness. What has been the result of my continued prayer for

the *Holy Spirit* in my own heart? Perhaps you may smile at the idea of my expecting an answer to such a prayer, when the prayer had been uttered for perhaps only a little more than a week back. Well, dear friends, I have become so much accustomed to seeing some answer to my prayers almost immediately that I have begun to take it as a matter of course—not when I pray in a half-hearted fashion, as a mere form, or as a sense of duty; but when I pray in real *dead earnest*, for any thing I feel is right and proper. I have been led to expect some sort of answer; and the answer in this case has been a little different from what I exaected it to be. This matter of the *Holy Spirit* has been for years rather confusing to me. What does it mean? I have often before prayed for the presence of the spirit of Christ Jesus in my heart; and I do not quite know what it was unless it was our recent lesson that prompted me to use the words of our text, and ask the Father for the *Holy Spirit*. Well, the effect has been to give me more of a spirit of charity and love toward all humanity than I perhaps ever have had before; and I have also been able to see the consequences of a lack of faith and a lack of charity in others, in a way I have never seen before. Why, it seems to me, as I think of it this morning, that one of the greatest troubles we have to contend with is a lack of faith and a lack of charity in each other. The reason why many make *failures* in life, if I am correct, is because they are so constantly thinking evil of other people; and in the same line they doubt God's providence and God's promises, and almost think evil of the great Father above. I want this talk to be helpful to you, dear friends, therefore I want to emphasize this uncharitableness by some illustrations that we all can enter into heartily. Uncharitableness is a disease. It gets hold of us, poisons our best feelings, warps our judgment, makes us sneering and ironical; distorts, twists, dwarfs, and cramps the whole universe round about us. The most prominent illustration I can think of in regard to bee men is the false statements in regard to the adulteration of honey. The thing has crept in and grown until not only our periodicals but our standard works, our cyclopedias, and our medical books, have got the disease, and made a shameful show of the depravity of humanity where there is no such *depravity*. What a sad thing! While Dr. Kellogg's book was on our tables a few days ago, one of the office hands turned over to the "Adulteration of Food," and there we found that foolish story repeated, about manufactured comb honey. Our good friends of the *Farm and Fireside*, in a lengthy editorial a few days ago, brought up the whole matter of adulteration of honey and the adulteration of candies, and ever so many other things, giving their readers the impression that humanity at large is so corrupt that we can hardly be sure of any thing. Now, this hasty, thoughtless manner of denouncing the great public at large—of denouncing the *business men* of our nation, all comes, if I am correct, because of a lack of the *Holy Spirit*; because we have

not that Christian love in our hearts that we ought to have, and that *strong reluctance* to repeat words of censure or reproach, that all of us ought to have. Oh, if newspaper men, magazine men, and publishers of cyclopedias, would, as they commence their work in the morning, pray from the heart that the Holy Spirit might keep them from these mistakes and evils, what a grand thing it would be! I suppose you have already thought of my bright little text right here—"Thinketh no evil."

A great part of my acquaintance with the world comes through the letters day by day—letters that I am obliged to read in order that I may do justice to my fellow-men. While most of these letters breathe a spirit of charity and love, there is occasionally one from a poor brother or sister who has got things mixed and wrong. He supposes he has been wronged and cheated, when nobody has had a thought of such a thing. How sad are such cases! I once had a teamster who was plowing on the creek bottom. He was right close by the railroad. His horses became excited, and made him some trouble with his plowing. He, poor fellow, became disturbed and excited too, and in his disordered state of mind he would have it that the *engineer of the locomotive* was running back and forth, sending the cars spinning hither and thither, just on purpose to annoy him and frighten his team. I had hard work to convince him that the railroad men never so much as thought of him and his team away down at the bottom of the bank. May be they did not see him at all; but he did not think it unreasonable or impossible that these men who handle great cars and locomotives, and whose time is worth ever so many dollars an hour, would stop and move great heavy machinery just on purpose to bother him with his comparatively *unimportant* labor. I often think of this illustration. Only yesterday Ernest wrote a whole page to a poor friend, to try to convince him that he was wrong in thinking that we had struck him a damaging blow in print, because we wanted to get the *business* away from *him* that he was doing. Why, the poor man did not even know that every member of the Root family have been wishing and almost praying for weeks back that the orders through the mails might stop. I presume I never would have mentioned it had not this circumstance brought it out. But, dear friends, I have actually felt pained when a clerk has opened a letter containing a hundred dollars, and sometimes two or three hundred. For so many years I have been in the habit of thanking God for such letters, that it *does* seem a little strange now to feel sad when they come. We have had more business than we knew what to do with. We have stopped sending out price lists and advertisements; we have discouraged those who inquired about goods—that is, hives and sections, because we knew how unable we were to fill orders promptly; and yet this poor friend would have it that we were greedy for the small business he was doing, and wanted it *all ourselves*. When by some blunder an advertisement was left out that should have ap-

peared, two or three good friends have almost insisted that A. I. Root kept it out because he was afraid it would injure *his* trade. And then when I have tried to explain, one or two have accused me of being untruthful. Why, bless your hearts, dear friends, do you think it possible, with all my cares and burdens, that I want what justly belongs to *you*? Think hard of me, if you choose, for our neglect during the past few weeks. You may even call me names, and accuse me of being lazy and half-hearted, and you may say I have got so I do not care as I once did; but, please do not hurt me any more by insinuating that I am *greedy* for *your* business. What a very sad picture I should present, if, after all these blessings, God has sent me with such unstinted abundance, I should be greedy for still more property, more business, and more *anxiety*. Many of the things you, in your thoughtlessness, have accused me of, I never knew any thing about; for it is *impossible* that any one human being should be able to compass or keep track of so much. And in saying this, please do not understand me that *no one* is looking after your kind orders. Others have taken my place. Other good kind Christian hearts are reading your letters, many of them, and dictating answers in my place. Perhaps they do not *know* you as I do, and very likely they are so cramped for time that their answers are brief; but I am sure that a kindly feeling actuates them all. I am sure that the Holy Spirit has a permanent lodging-place in the hearts of the most of these friends and helpers who are gathered about me, doing their part to the best of their ability, and as I would do it if I were able to do it all.

During revival times we often witness the workings of the Holy Spirit in the hearts of men. A few weeks ago my old pastor, A. T. Reed, wrote me that he would be very glad to have me pass the Sabbath with him in a neighboring town, that I might assist him in the revival work now going on there. I could not well be spared for even one day, at this season of the year, especially at this present season; but I arranged to leave home late Saturday night, and to get home early Monday morning. Almost as soon as I stepped from the train Saturday evening, I was ushered into a church full of pleasant, wide-awake, earnest people. Their very faces inspired me; and I talked to them for forty minutes, perhaps, as well as I ever talked in any similar audience. Before the meeting closed, great numbers of young and old, especially the former, arose and testified for Christ Jesus. During the Sabbath I attended five different services, taking more or less part in all of them. I came home with a new inspiration in my heart for the cause. It was arranged that my stay over Sunday should be with a family who had lately come out on the Lord's side—at least a grown-up son and daughter had, and we hope and pray that the father will follow soon. The son and daughter were perhaps from eighteen to twenty, and I was at once impressed with the beautiful characters of the two. They were bright, enterprising,

go-ahead, remarkably intelligent, and at the same time their lives were consecrated to the Master. They especially won my respect and admiration, the more so, perhaps, from the fact that God had just called home the mother of the household. She died in March. In order to save expenses, and at the same time make the home pleasant for the bereaved father, the daughter had, with much zeal and devotion, undertaken to fill the mother's place in the household. The responsibility was a little new to her, and it touched my heart to see how anxious she seemed to have every thing pleasant for her guest, and to do as her mother would have done had she been alive. She did all the cooking and housework. Before the evening meeting she came out with a pleasant face, and called us in to supper. I replied, in a vein of pleasantry :

" Why, my good young friend, I did not know we were to have any supper, and it hardly seems as if we need any after our most excellent late dinner."

" O Mr. Root! is it really true that you mean exactly what you say? Did you indeed consider it an excellent dinner? You do not know how anxious and troubled I felt about it; and I was so afraid that I should not have every thing just right, or just as mamma would have had it."

As she spoke the words, a look of tenderness came into her face as she thought of the dear mother who had so recently gone; and it gave me, too, a glimpse of that anxious spirit which I had before seen beaming from her expressive hazel eyes. Had anybody asked me at the time what her complexion was, or what the color of her hair was like, I could not have told, for I rarely notice such things; but I should have said, notwithstanding, that she was one of the most beautiful characters (perhaps I might as well say *most* beautiful young women) that I had ever met. Now, please do not think that I am partial; for her brother was as handsome a young man as one often meets. The attraction in both was, however, in the line of " pretty is that pretty does." These two had recently given their hearts to Christ under the teaching and preaching of our dear brother Reed, who once, a few years ago, in God's providence, brought me from darkness into light. Brother Reed has grown since then, and God's work is growing rapidly in his hands. Some of you who see this, doubtless know him and have learned to love him. As his chosen field of work is evangelical, he may come into your neighborhood some time. If so, do not, I beg of you, miss seeing him and hearing him talk. Well, my heart was full of the Holy Spirit during this Sunday work. It was an easy matter to love everybody—even the ruddy-faced saloon-keepers that abound in such plenty in the town of Lorain. And is it any wonder that I had several times thanked God for giving me glimpses and even a brief acquaintance with two such nice people as this boy and girl I have been telling you of?

Of course, I recognized that they were human, like the rest of us—that close acquaintance might develop faults in their charac-

ters that seemed so perfect; but, dear friends, what is the harm of thinking well of everybody? My good old mother sees so much good everywhere in everybody, that it is a standing joke among the children. If she chances to talk with a tramp or a Jew peddler, she bids him good-by, with the firm conviction that he is a good man; and I know by experience that the tramps and Jew peddlers—in fact, almost everybody else, leave her with a feeling in their hearts, if not out-spoken, " Well, there is a good old lady, any way." Two or three times I have heard her called an old saint. Please excuse this much in regard to my mother, dear friends. It will probably be a long, long while before anybody calls this son of hers, who is writing to you, a saint or any thing approaching it. But is it not our privilege, dear friends, to see *saintly qualities* in our friends and *neighbors*?

Let us now go back to the neighbors I was speaking about—a boy and girl of eighteen and twenty—the two whom I had learned to consider almost as young saints—at least, during my brief Sunday acquaintance. Sunday afternoon, it being decoration day, I spoke briefly to an audience of several hundred. There were four or five speakers present, so we all spoke briefly. At the close of the talk, some old neighbors who used to live in Medina came forward and took me by the hand. As they lived near by, I was constrained to step into their home a few minutes between meetings. A young man—one of Ernest's old playmates—was among the converts, and the Holy Spirit had certainly found a lodging-place in his heart. The poor mother had not been attending the meetings, and she had not yet risen to that point where love, hope, and charity brighten and ennoble " our neighbors." I hope she will excuse me, if she ever sees this, for quoting one single expression from her talk. When they asked me where I was stopping, I gave them the name. They were new comers, however, and not much acquainted. Finally the mother spoke:

" Oh, yes! I know now. It is where that red-headed girl lives, who keeps house for her father."

Just then the words " red-headed girl " jarred particularly on my spiritual state. It is a common expression, and may be that almost any one has at times indulged in just such words. Dear friends, is it right to speak in that way of any neighbor? I had not noticed the color of her hair before, any more than to remember that it was light; and as she spoke feelingly of her love for Christ, her eyes were beautiful, and her face was beautiful, and her hair too. It seemed in keeping with her peculiar complexion. I noticed, as she sat down to the table, somewhat fatigued with her labors over the stove, a flush on her cheek. I knew what brought it there, and I admired her all the more. If there is any class of women I respect and admire more than others, it is those who voluntarily choose to do their own housework; who know what it is to cook and sweep, to iron and wash. The words " red-headed girl " kept ringing in my ears. They called up recollections of

times when I have thoughtlessly and unfeelingly spoken of my friends and neighbors with a lack of charity. May God help me to do so no more. May that Holy Spirit I have been telling you of help me not only to speak of, but to look upon every human being as something sacred and holy—as a piece of God's handiwork. And may this same Holy Spirit help me to see the good and saintly traits in fallen ruined humanity.

"O Lord God, help not only my poor self, but help every reader of GLEANINGS to pray often, in faith believing, for that Holy Spirit that Christ Jesus thine only Son promised to those that ask. Help us that the influences of the Holy Spirit may find such a lodging-place in our hearts that kindness and love shall characterize our every thought and word and deed; and may its influences brighten and ennable our poor hearts that are so prone to wander after the bad. Help us to remember our sacred calling; help us, who have enlisted under the banner of the cross, to remember our profession; help us to see light ahead, and not darkness and ruin; help us to look up to the great God above, who created us in his own likeness and in his own image. Save us from the peculiar temptations that so often beset at least most of us, and which tempt us to see only the defects and misfortunes of the neighbors round about us; help us, O Lord, to see the God part, and inspire us with that Spirit, that we may be able to encourage and bring out the good; give us, we pray thee, of that Holy Spirit according to those unfailing promises, as in the language of our text to-day."

Come, Holy Spirit, heavenly Dove,
With all thy quick'ning powers;
Kindle a flame of sacred love
In these cold hearts of ours.

BUSINESS AT THE HOME OF THE HONEY-BEES.

SOME PRETTY SEVERE CHARGES AGAINST
A. I. ROOT.

DON'T be troubled, dear friends; it is not somebody else that I am going to complain of, it is only myself; and the particular reason why I speak of it is that I may ask you all to be slow in condemning your friends and neighbors, and to remember that there are almost always palliating circumstances that we do not know all about. In the past two or three issues I have told you that things were in a rather bad shape here this present season, on account of the unexpected rush for goods. Amid it all, however, we have tried to be prompt in answering all inquiries, and we have tried hard to tell the truth. I do not know that I have ever exhorted our clerks more, relative to making some sort of answer to every complaint that has come, than this present season. Notwithstanding, however, a great many of our friends have had great reason to complain, and perhaps good reason to say hard things of your old friend. The following letter illustrates this:

Dear Sir:—I write you once more concerning the supplies I ordered of you six weeks ago, which

have failed to materialize. After four weeks had passed I wrote you about the matter, and you claimed that orders had overwhelmed you so that you had been running night and day, but would ship my goods the next day (May 30).

After reasonable time for the shipping bill to reach me, I wrote again for the reason you failed to do as you agreed, and you failed to ship, or explain any thing. I have talked with several bee-keepers about the matter, some of whom are readers of GLEANINGS, and all agree that your promise to me of May 29, that you would ship my goods to-morrow, was a base deception. If you could not fill the order, say so like a man. My bees are swarming, and I shall get supplies elsewhere. A portion of the goods will be worthless to me before you get around, if you ever do. I demand my money back by return mail.

F. F. HARRINGTON.

Hartwick, N. Y., June 9.

Whoever undertakes to carry on a business requiring many hands, should take into consideration the fact that sickness and accidents will occur more or less, as a matter of course, and two or more should be trained, if possible, for the very important posts. The proprietor ought to ask himself the question almost daily, "What should I do just now if so and so should be sick or kept away?" This I have tried to do to the extent of having one or more "loose men" around, with nothing particular for them to do. This season has been no exception. I mentally wondered several times what I should do if a certain one were disabled or kept away, and in a very few days the very thing happened. Sometimes two valuable hands were laid up at once. During the very height of our rush I told my wife that nothing would make greater disaster than to have something happen to "John," who takes the entire charge of orders, and tells people what we can do and what we can not do. Well, John sprained his ankle at this very crisis, and was kept from the office nearly two whole weeks. But even when he could hardly endure the pain, the clerks were running to him with inquiries concerning business. This state of affairs threw our good friend Harrington behind, with a lot of others. Although Ernest was pretty well burdened with the journal matter, bees, and attendant letters, he took Mr. Calvert's place as best he could, and wrote the letter promising that the goods should be shipped May 30. He did this because "Jacob" told him they could surely go at that time. But there are other "big guns" in our establishment besides Jacob; and somebody overruled Jacob's ruling, it seems, and, in fact, in John's absence there were several who had been promised, and the promises could not well be all fulfilled at once. The postal card which friend H. says was not answered was answered promptly, but perhaps not as explicitly as the urgency of the case demanded. About the time the goods did go, I got hold of the transaction and declared that this shipment should be put on the next train, even if it stopped everybody else. Now, I do not know that even I had a right to say this, for a promise is as binding toward one man as toward another. It is true, that

although Ernest gave the positive promise that the goods would go promptly, they did not go until *seven days* afterward. Under the circumstances, friend H. was quite excusable in deciding that Ernest's promise was a "base deception." If he *knew* Ernest, however, he would never think of accusing him of trying to deceive anybody. Ernest is sometimes forgetful; but when he made the promise, he had no *thought* that it would not be kept. Now, I am very well aware, friends, that *apologies* are very well, so far as they go; but in cases like the above (and I fear there have been quite a number of them), the only thing that can be done is to ask these friends who have been "humbled" by receiving promises that have not been kept, to make out their bills for damages. The only honorable apology, in my opinion, for such kind of business, is a *dollars-and-cents* apology. Friend H., make out your bill, and we will try to meet it. Meanwhile, A. I. Root begs that you will put out your hand with as much good grace as you can, under the circumstances, and "shake." Yes, even if we are going to quarrel, let us shake first; and if we can not shake *after* we get through, we shall be so much ahead any way. Hundreds of dollars have been already sent back, and a good deal of it just as soon as the letter was received, because the order was to ship at once or not at all; and we stand ready to return every dollar that has been sent us just as soon as we are told to, providing the goods have not already gone.

EDITORIAL.

Thou hast been a shelter for me.—PSALM 61:3.

WHY DO THE BEES KILL OFF THEIR DRONES IN JUNE?

So many have asked this question during the past few days we have thought best to answer it here. I know of no other cause for such a state of affairs than a break in the honey-flow or pasturage; and, as a general thing, it indicates that you had better commence feeding until honey begins to come. If you do not, you will lose in brood in a way that will be damaging to your colony, even if you do not lose the colony outright by starvation. Watch the honey-flow, especially if you have colonies nearly destitute of stores.

HOW WE ARE GETTING OUT IN FILLING ORDERS AT THIS DATE, JUNE 13.

WELL, dear friends, we are still running night and day, with 500 or 600 orders ahead of us; but although the number of orders is large, the amount of goods to be sent is not nearly so great, for the orders are small, comparatively. We expect by July 1st to be up in every department. In fact, every thing now goes almost by return mail, or by return express or return train, unless it calls for hives and sections. Our wax-room is so well ahead they have come down to ten hours a day, so you can have any thing in the line of foundation right off.

QUEENS AT LOW PRICES.

WE are well aware that queens are offered by different parties lower than we dare undertake to furnish them. Those ordering should remember, however, that we have for years been in the habit of having queens on our table every day, ready to be

sent out by the first mail. Now, at least some of those who offer queens at low prices do not send them promptly. Perhaps our readers know how many, better than we do. Another thing, those who order queens often live some distance from their postoffice. People write us about making a trip to the postoffice every day for a week, and that where the postoffice is three or four miles away. Imagine the trouble and expense it makes when the queens are not sent promptly. Another thing, those who are new in the business often fail in getting queens to go through alive. I fear that some of our younger friends have thoughtlessly figured up that they could do well in selling untested queens for 50 cents; but when they come to find, though, in experience, that half of them or more die before reaching their destination, they sometimes get into real trouble. Now, I do not make these remarks because I wish you to send your orders to us, but because I wish those who propose advertising queens at very low prices would think well and be careful before they embark in the business.

THE NEW WATER-CURE TREATMENT.

A HOST of letters have been received since our last; and the greater part of them—in fact, I might say all—who have purchased the secret of Dr. Hall speak in praise of this drugless remedy. Many give actual experiences of where it has been the means of saving life. They say, too, that before going to Dr. Hall, they had applied to our physicians right and left. If this is true, it is a rather sad state of affairs; but I can hardly believe that the average family physician is ignorant of remedies that have been laid down in our medical books, and even our common family doctor books, for ages. I am inclined to think that those good friends who have invested their \$4.00 are a little prejudiced against our doctors, and a little biased in favor of Dr. Hall. I am, however, well satisfied that even Dr. Hall's manner of doing business has been the means of saving life, and giving health to many more. Then is it not right for him to take \$1.00 from the sick and suffering for his little pamphlet? These friends I have been speaking of try to make out it is right, even though the treatment is in our common doctor books. Now comes the question, "What is right in such a state of affairs?" Why, it seems to me to be a very simple matter. All valuable information comes to us through books and periodicals. Let Dr. Hall give us a nice little book, fully illustrated, and filled with testimonials and experiences from those who have used this treatment. Sell this book at about the price similar books are ordinarily sold. By this means he will do a hundred times more good, and I think very likely he will get just as much money. I myself should be very glad to give the book a recommendation. I should like to have it, however, embody also the opinions of some of our leading physicians.

BEAUTY VERSUS UTILITY, AGAIN.

ON page 434 of GLEANINGS for June 1, in speaking of some yellow bees sent by Mr. Jacob T. Timpe, the type made us describe them as "yellow-banded workers." What we meant to have said was, "Five yellow-banded workers." Through the sickness of several of the clerks, the writer was obliged to attend to other work and omit some proof-reading. In this connection we would say that Mr. Timpe takes some exceptions to our having suggested in

this editorial the possibility that these four and five banded bees *might* contain some Cyprian blood. He assures us the bees in question are from pure Italian stock, and are *not* of Cyprian descent. In proof he sends another cage of bees which are indeed handsome five-banded bees. Though they resemble very closely some yellow Cyprians they are no doubt of purely Italian origin.

SENDING SPECIMENS OF FOUL BROOD BY MAIL.

EVERY season we have more or less such samples sent in paper boxes, which are often burst open in the mail-bags. The clerk who opens the mail sets the specimen in a certain place until the letter describing it is found. Then the one who examines it to see whether it is real foul brood or not may be careless. They ought not to be in our establishment, for foul brood has cost us already more than \$1000, clean cash. The point is, this sending of samples or specimens by mail or express, or any other way, should be stopped. It is very dangerous, and there is not a bit of need of it. We can tell you from description just as well as to see the brood itself; and our text-books and journals have all described it, over and over. Please do not send any suspicious comb through the mails or in any other way. Let all the bee-journals echo the request. If you are afraid it is in your hives, examine the description in our text-books; then if you are not satisfied, state the matter plainly; write to us or some other competent authority. Meanwhile take every precaution against spreading. It should be treated like scarlet fever, yellow fever, cholera, etc. Stamp it out of existence; and by no manner of means give a chance of spreading it by your own thoughtlessness or foolishness.

THE A B C BOOK.

WE have had a great many very kind notices of the A B C book, but never a kinder one, or one that we consider more complimentary, than the one made by Bro. Newman in the *American Bee Journal*, page 363. The following is the notice:

The A B C of Bee Culture, by A. I. Root, has again been revised and enlarged, and the new edition is now on our shelves. It contains 420 pages, and is profusely illustrated. It is the cheapest, and one of the best—if not the very best—of all the books on apiculture in existence. We congratulate friend Root upon the perfection and excellence of his book.

This is more highly appreciated, because friend Newman is not only the publisher of a bee-journal, but the author of a most excellent *bee-book*, and a practical printer besides. This state of feeling between publishers is indeed pleasant; and this is not confined to publishers of bee literature either. When G. B. Lewis & Co. suffered loss by fire recently, it will be remembered they received messages of condolence from other supply-dealers, with offers of assistance. As C. C. Miller said recently, it seems as if the millennium of brotherly feeling and good will were now among apiculturists. The *American Bee Journal* is always on time. We never saw one copy in all the hundreds that have come to us that was poorly printed—over-inked or under-inked. They are always a model in typographical appearance. We are in a position to know that it is not an easy thing to be out on time, nor to make every number of a periodical an exact duplicate of the others typographically. We do not say this because we desire to reciprocate friend Newman's kindness, but because it is something for publishers to emulate.

**BEAUTIFUL BEES are always pleasant to the eye.
GOOD QUALITIES are always profitable.**

If you want Bees and Queens that combine beauty and good qualities to a *marked degree*, write for circular giving low prices. No circulars sent out unless applied for. **CHAS. D. DUVAL,** 5tfdb **Spencerville, Mont. Co., Md.**

¶ In responding to this advertisement mention GLEANINGS.

"HANDLING BEES." Price 8 Cts.

A chapter from "The Hive and Honey Bee, Revised," treating of taming and handling bees; just the thing for beginners. Circular, with advice to beginners, samples of foundation, etc., free.

5tfdb CHAS. DADANT & SON, **Hamilton, Hancock Co., Illinois.**

¶ In responding to this advertisement mention GLEANINGS.



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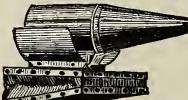
Look Here! Supplies Cheap

Italian and Albino Queens and Bees; Chaff and Simplicity and Nonpareil Hives. Extractors, Smokers, Foundation, Surplus Section Boxes, Root's Perforated Zinc. Price List Free. Write for One.

A. A. BYRD, WEST CHESTERFIELD, CHESHIRE CO., N. H.

¶ In responding to this advertisement mention GLEANINGS.

BEST ON EARTH



ELEVEN YEARS
WITHOUT A
PARALLEL, AND
THE STAND-
ARD IN EVERY
CIVILIZED
COUNTRY.

**Bingham & Hetherington
Patent Uncapping-Knife,**

Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/2 in.	postpaid	... \$2.00
Conqueror "	3 "	"	... 1.75
Large "	2 1/2 "	"	... 1.50
Extra (wide shield) "	2 "	"	... 1.25
Plain (narrow) "	2 "	"	... 1.00
Little Wonder,	1 1/4 "	"	... 65
Uncapping Knife.....			... 1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to 1tfdb **BINGHAM & HETHERINGTON, Abromia, Mich.**

¶ In responding to this advertisement mention GLEANINGS.

GLEANINGS IN BEE CULTURE.

Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them *for sale*, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I *especially* approve, **; those that are not up to *me*, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.

8 Bible, <i>good print</i> , neatly bound.....	25
10 Bunyan's Pilgrim's Progress*.....	35
6 First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole range of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents each.	
5 Harmony of the Gospels.....	35
3 John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*.....	10
1 Gospel Hymns, consolidated Nos. 1, 2, 3 and 4, words only, cloth, 12c, paper.....	05
2 Same, board covers.....	20
5 Same, words and music, small type, board covers.....	45
10 Same, words and music, board covers.....	75
3 New Testament in pretty flexible covers.....	05
5 New Testament, new version, paper cover.....	10
5 Robinson Crusoe, paper cover.....	20
4 Stepping Heavenward*.....	18
15 Story of the Bible*.....	1 00
A large book of 700 pages, and 274 illustrations. Will be read by almost every child.	
5 The Christian's Secret of a Happy Life**.....	25
8 Same in cloth binding.....	50
“The Life of Trust,” by Geo. Muller*.....	1 25
1 Ten Nights in a Bar Room, by T. S. Arthur*.....	05
BOOKS ESPECIALLY FOR BEE-KEEPERS.	
As many of the bee-books are sent with other goods by freight, or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each.	
Postage.....	15
15 A B C of Bee Culture Cloth.....	1 10
5 A Year Among the Bees, by C. C. Miller ..	45
14 Bees and Bee-keeping, by Frank Cheshire, England, Vol. I, \$.....	2 36
21 Same, Vol. II, \$.....	2 79
or, \$5.25 for the two, <i>postpaid</i> .	
Bees and Honey, by T. G. Newman	1 00
15 Cook's New Manual Cloth.....	1 35
5 Doolittle on Queen Rearing.....	95
2 Dzierzon Theory.....	10
1 Foul Brood; Its management and cure; D. A. Jones	09
1 Honey as Food and Medicine.....	1 00
10 Langstroth on the Hive and Honey-Beet.....	1 40
15 Langstroth Revised, by Ch. Dadant & Son.....	1 85
10 Quinby's New Bee-Keeping.....	1 40
10 Queen-Rearing, by H. Alley.....	1 00
4 Success in Bee Culture, by James Heddon The Production of Comb Honey, by W. Z. Hutchinson.....	46 25
The Apriary, or, Bees, Bee-Hives, and Bee Culture, by Geo. Neighbour & Sons, England. 1 75	
British Bee-keeper's Guide. Book, by Thos. Wm. Cowan, Esq., England.....	40
3 Merrybanks and His Neighbor, by A. I. Root MISCELLANEOUS HAND-BOOKS.	25
5 A B C of Carp Culture*.....	35
3 A B C of Potato Culture, Terry**.....	35
This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.	
5 An Egg-Farm, Stoddard**.....	45
Barn Plans and Out-Buildings*.....	1 50
Cranberry Culture, White's.....	1 25
Canary Birds; paper, 50c; cloth*.....	75
Draining for Profit and Health, Warring.....	1 50
5 Eclectic Manual of Phonography; Pitman's System; cloth.....	50
6 Fuller's Practical Forestry*.....	1 40
10 Fuller's Grape Culturist*.....	1 40

10 | Farming For Boys*

This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.

7 | Farm, Gardening, and Seed-Growing**.....

This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 168 pages.

10 | Gardening for Pleasure, Henderson*.....

W. H. Henderson's *Gardening for Profit* is a good deal on the pleasure part; and “Gardening for Pleasure” takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get “Gardening for Profit.” This work has 246 pages and 134 illustrations.

12 | Gardening for Profit, new edition*.....

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts.

1 | Gardening for Young and Old, Harris**.....

This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young as well as to old is brought out in a most happy manner. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

10 | Garden and Farm Topics, Henderson*.....

Gray's School and Field Book of Botany... 1 80

5 | Gregory on Cabbages; paper*.....

25

5 | Gregory on Squashes; paper*.....

25

5 | Gregory on Onions; paper*.....

25

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

10 | Household Conveniences.....

1 40

2 | How to Propagate and Grow Fruit, Green*.....

25

5 | How to Make Candy**.....

45

10 | How to Keep Store*.....

1 00

2 | Injurious Insects, Cook.....

25

10 | Irrigation for the Farm, Garden, and Orchard, Stewart*.....

1 49

This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great resource before us at the present day. The book has 274 pages and 142 cuts.

10 | Money in the Garden, Quinn*.....

1 40

3 | Maple Sugar and the Sugar-Bush**.....

35

By Prof. A. J. Cook. This was written in the spring of 1887, at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest sugar and maple syrup, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.

1 | Poultary for Pleasure and Profit*.....

10

11 | Practical Floriculture, Henderson*.....

1 35

Peach Culture, Fultons.....

1 50

10 | Profits in Poultry*.....

90

2 | Silks and the Silkworm.....

10

10 | Small-Fruit Culturist, Fuller*.....

1 40

10 | Success in Market-Gardening*.....

90

This is new book by a real, live, enterprising, successful market-gardener who lives in Arlington, a suburb of Boston, Mass. Friend Rawson has been one of the foremost to make irrigation a practical success, and he now irrigates his grounds by means of a windmill and steam-engine whenever a drought threatens to injure the crops. The book has 208 pages, and is nicely illustrated with 110 engravings.

1 | The Silo and Ensilage, by Prof. Cook, new edition, fully illustrated.....

20

5 | Strawberry Culturist, Fuller*.....

20

1 | Talks on Manures*.....

1 75

This book, by Joseph Harris is, perhaps, the most comprehensive one we have on the subject, and the whole matter is considered by an able writer. It contains 366 pages.

2 | The Carpenter's Steel Square and its Uses; Hodgeson; Abridged.....

15

10 | The New Agriculture, or the Waters Led Captive.....

75

2 | Treatise on the Horse and his Diseases.....

10

3 | Winter Care of Horses and Cattle.....

40

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages, and 42 cuts.

8 | What to Do, and How to be Happy While Doing It, by A. I. Root.....

50

3 | Wood's Common Objects of the Microscope**.....

47

Address your orders to

A. I. ROOT, Medina, O.

GLEANINGS IN BEE CULTURE.

AFTER 10 YEARS,

Owing to fine workmanship and first-class materials used in the manufacture of our goods, our business has reached that point where, without boasting, we can justly claim to be the largest manufacturers in the country of all kinds of

BEE - KEEPERS' SUPPLIES.

The reason of our constantly increasing trade, notwithstanding the great competition, is, that when we get a customer we keep him, as we furnish superior goods at lowest prices. We wish to also state, that we are sole manufacturers of the

ARTHUR C. MILLER AUTOMATIC FOUNDATION FASTENER.

(See description in March 15th GLEANINGS.)

If You Need Any BEE-HIVES, SECTIONS, FOUNDATION, Etc.,

Send for catalogue and price list. Address

The W. T. FALCONER MFG. CO., Jamestown, N. Y.

In responding to this advertisement mention GLEANINGS.

REMOVED, from Coburg, to RED OAK, IOWA, my entire factory for BEE SUPPLIES.

Wholesale and Retail.

40-page Illustrated Catalogue FREE TO ALL.

We have the largest steam-power shops in the West, exclusively used to make EVERYTHING needed in the Apiary, of practical construction and at the LOWEST PRICES. Italian bees, queens, 12 styles of Hives; Sections, Honey-Extractors, Bee-Smokers, Feeders, Comb Foundation, and everything used by bee-keepers, always on hand.

Address **E. KRETCHMER, Red Oak, Iowa.**

In responding to this advertisement mention GLEANINGS.

The Ullmann & Philpott Mfg. Co.,

89-93 MERWIN ST., CLEVELAND, O.

Manufacturers of Fine Black and Colored

PRINTING INKS.

This Journal is Printed with our Inks.
Mention Gleanings. 24-22d

Established 1878.

SMITH & SMITH,

Wholesale and Retail Manufacturers of

BEE-KEEPERS' SUPPLIES.
KENTON, OHIO.

Price List Free.

Mention Gleanings.

BEE-KEEPERS' SUPPLIES.

We are prepared to furnish bee-keepers with supplies promptly, and at greatly reduced rates. Estimates gladly furnished, and correspondence solicited. Our goods are unexcelled in quality and workmanship.

Italian Queens and Bees at a very low price. Send for large illustrated price list, free. Alley's Queen and Drone Trap and Swarm Hiver always on hand.

A. F. STAUFFER & CO.,
20tfd. Mention Gleanings. Sterling, Ill.



Eaton's Improved SECTION CASE.
BEES AND QUEENS. Send for free catalogue. Address

FRANK A. EATON,
2-13db Bluffton, Ohio.

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